MEDICAL RECORD

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—Plato

OCTOBER 1946

Vol. 159, No. 10

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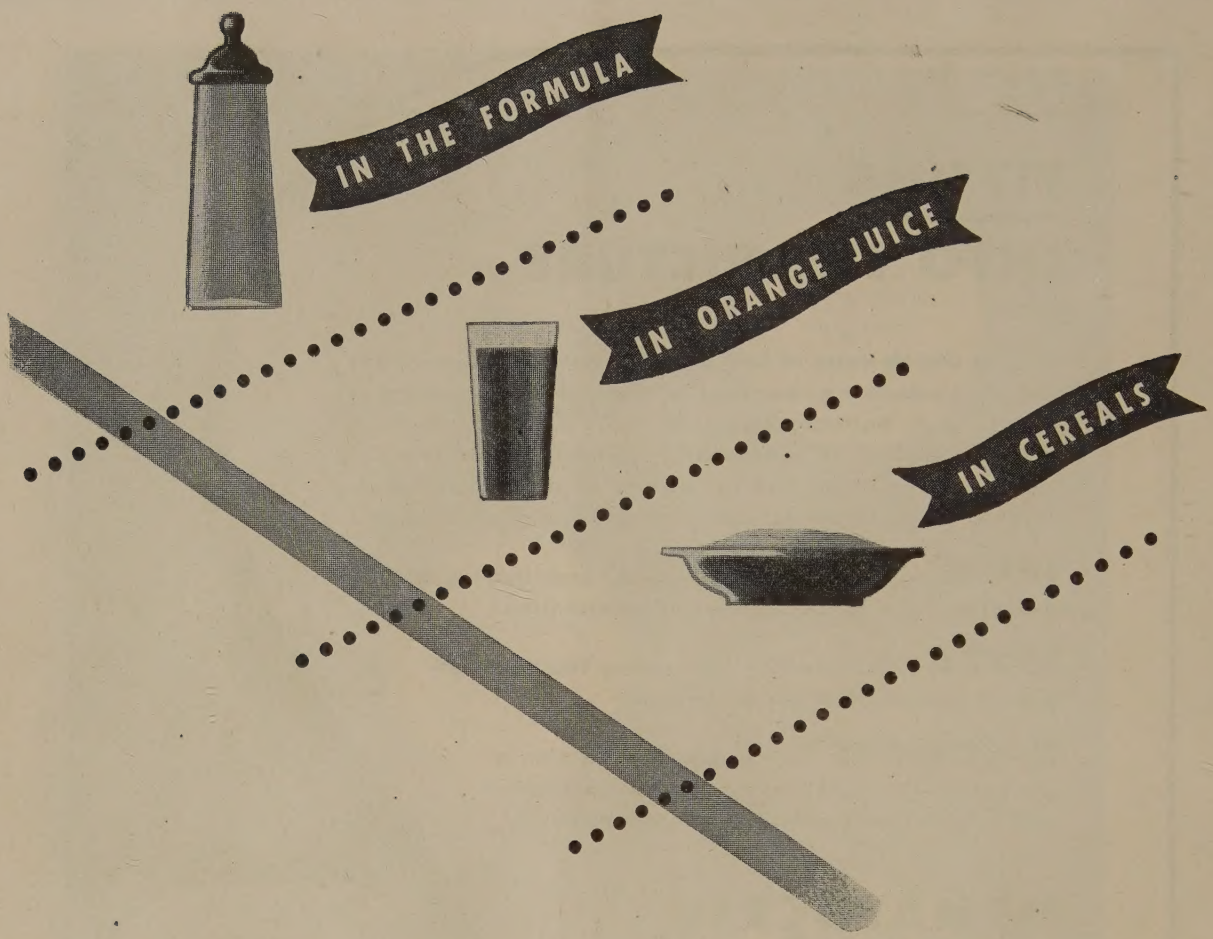

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OCTOBER, 1946

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Entered as Second Class matter at the Post Office at Kutztown, Pa., under the Act of March 3, 1879. Office of Publication, 307 Main Street, Kutztown, Pa. Editorial and Executive Offices, 215 Fourth Avenue, New York 3, N. Y.

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New Studies on Vitamins

An advisory committee of eight scientists has been appointed by the National Vitamin Foundation Inc., to assist Dr. Robert Stanley Goodhart, scientific director, in the formulation of an overall research program on vitamins and to approve specific investigations to be conducted through grants-in-aid to various established institutions, continuing three such projects already underway. The foundation replaces the Institute for Vitamin Research organized in 1944.

In announcing the appointments and the foundation's new name and goals, Dr. Theodore G. Klumpp, chairman of the foundation's board of governors, stated the vitamin research program would be broad in scope "to permit the support of diverse projects likely to furnish information needed to fill in serious gaps in our knowledge of nutrition."

The purpose of the Scientific Advisory Committee is to safeguard the quality of the foundation's research program and to help assure its operation in the public interest. The board of governors believes the newly appointed committee to be a harbinger of a valuable and productive research program.

Under grants totalling $11,000, three investigations already in progress in which the foundation is interested were announced by the board of governors as: A nutritional survey of the school children of Burlington, Vt.; investigations of the rôle of folic acid in leukemia and quantitative studies of the effects of nutrition upon the susceptibility of mice to anaphylactic shock.

This work is planned as a first step in a long term program to identify the fundamental metabolic systems involved in anaphylaxis, allergy and immunity.

In addition to these grants-in-aid, which are to be made ordinarily by the Foundation on January 1 and July 1 of each year, a grant of $1,000 was made to the New York City Food and Nutrition Committee for a permanent exhibit on nutrition. This exhibit was placed on public display in Rockefeller Center during June of this year and is between public exhibits at the New York City Food and Nutrition Center.

Dr. Goodhart, in a statement on research plans of the foundation, expressed an interest in a wide variety of problems. He stated that the National Vitamin Foundation was established to further the science of nutrition and, particularly, to enhance the fund of knowledge concerning the physiological functions of the vitamins and their roles in the maintenance of health and the cure of disease. To realize its purpose, the foundation is prepared to give financial aid to universities and other qualified research institutions and individuals, for the conduct of investigative work in the field of nutrition.

Applications for grants-in-aid should be made to Dr. Goodhart at 150 Broadway, New York, N. Y.

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Open Forum

Recovery of Damages for Fright

JOHN SIMPSON
New York N.Y.

The question whether recovery can be had in an action at law for fright, unaccompanied by physical injury, has been the subject of much discussion, both in the English and the American courts; and it has been the source of divided conflict of decisions for many years. In the first cases, the question was usually answered in the negative. In 1888, an English court and a New York court both failed to find a precedent for such an action, and they declined to provide one. The Texas Supreme Court appears to have been one of the first courts to give this rule a more liberal application, and in 1890, in Hill vs. Kimball, 76 Tex. 210, held that the fact that it could find no exact precedent for such an action was no sufficient reason why such an action should not be sustained. In 1900, the same court, in Gulf, C. & S. F. Ry. Co. vs. Hayter, 93 Tex. 239, reviewed the decisions in conflict on the question and came to the conclusion that "where a physical injury results from a fright or other mental shock, caused by the wrongful act or mission of another, the injured party is entitled to recover for damages, provided, the act or commission is the proximate cause of the injury, and the injury ought, in the light of all the circumstances, to have been foreseen as a natural and probable consequence thereof"; and that court also held that, as a general rule, these questions should be left to the discretion of the jury.

These two decisions were at first followed by only a minority of the courts, but since 1901 the English courts have followed the rule laid down in that year in Dulieu vs. White & Sons, 2 K. B. (1901) 669, 85 L. T. (N. S.) 126, that a person could recover for physical damages from nervous shock unaccompanied by any physical impact, and although in the American courts the conflict of opinion still continues, the views expressed in the two Texas cases cited have been adopted by a majority of the courts of this country.

This is the history of the origin and development of the doctrine, substantially as stated in the latest decision on the subject, Houston Electric Co., vs. Dorsett, 194 S. W. 2d 546, in which the Texas Supreme Court held that a petition alleging that, as the plaintiff was carefully crossing a city street, the defendant's bus, while being negligently driven, narrowly missed striking the plaintiff, causing her to suffer great emotional upset, shock and fright, resulting in the derangement of her nervous system, so that she was compelled to remain away from her work for approximately a year, stated a cause of action against the bus company. This is in accordance with the prior decisions of the Texas court, which has always consistently held this view of the question.

Resistance of Bacteria to Antibiotics

A method for studying the ability of bacteria to develop resistance to the action of such antibiotics as penicillin and streptomycin has been developed by scientists on the staff of the Sterling-Winthrop Research Institute, Rensselaer, N. Y.

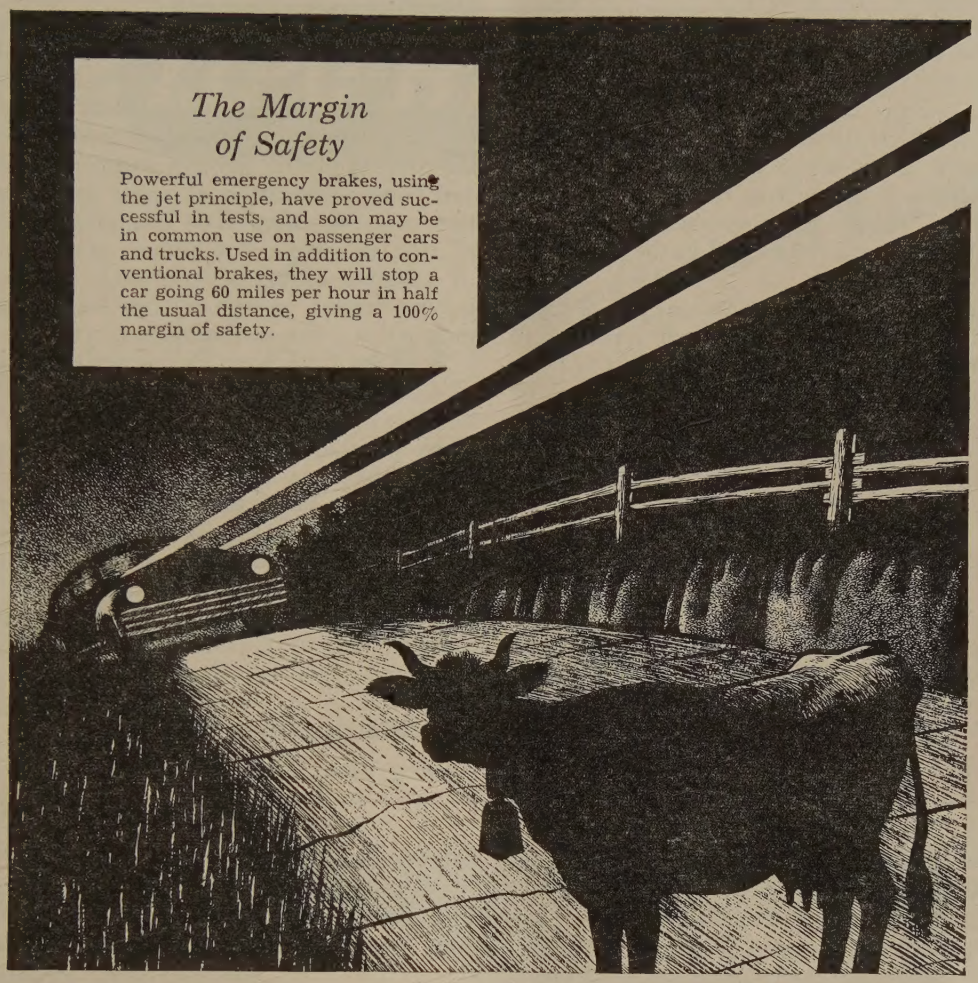
These researchers believe that the "phenomenon of resistance" to antibiotics may be involved in the mechanism by which the drugs act on the germs. Bacteria use up energy with the help of catalysts. These catalysts are organized in what the scientists call enzyme systems inside the bacterial cells.

It has been found that these enzyme systems may be attacked by antibiotics by having the sulfhydryl group in the enzyme molecule bound up so that the enzyme no longer can catalyze the chemical reactions. Antibiotics have been found to fall into two general classes, those which affect bacteria by binding their sulfhydryl groups very easily, and those which do so only under very special and restricted conditions.

The first group includes an antibiotic called gliotoxin, which has not yet been used medically, and the antibiotics from garlic and some burdock, a weed common over a large part of the country. The antibiotics which require special conditions for binding up the sulfhydryl groups are the better known ones such as penicillin, streptomycin and the new antibiotics from wild ginger.

It has been possible to create in the laboratory, models of groups in these enzymes which reveal by tests under simple laboratory conditions to which group a new antibiotic is apt to belong. Tests on these model enzyme groups show that the wild ginger, penicillin, and streptomycin antibiotics block the reactions in a way that resembles the effects on bacteria. At the same time it is these antibiotics to which bacteria may become so resistant that they are not killed by even one thousand times ordinarily fatal concentrations. In contrast, bacteria do not seem to be able to develop increased resistance to those other antibiotics which fall in the first group of reacting with the sulfhydryl groups under almost all conditions.

By graduated dosage the researchers have been able to train germs to live and grow when exposed to all of these antibiotics, but the power to develop the increased resistance seems to be related to the ease with which the sulfhydryl groups can be chemically neutralized. The importance of these observations arises from the fact that the new method may provide a means of predicting in advance whether bacteria can become resistant to a new antibiotic or not and, therefore, may enable scientists to judge what the prospects are that the new compound will have important medical applications.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Powerful emergency brakes, using the jet principle, have proved successful in tests, and soon may be in common use on passenger cars and trucks. Used in addition to conventional brakes, they will stop a car going 60 miles per hour in half the usual distance, giving a 100% margin of safety.

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a multi-vitamin emulsion, especially palatable in milk, water, juices or formula.
Full-size sample package for physicians upon request.

One teaspoonful (5 cc) of Vi-teens Homogenized Vitamins contains:

Vitamin A (from fish liver oils)	3000 U.S.P. Units
Vitamin B_1	1 Milligram
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Vitamin C	40 Milligrams
Vitamin D	800 U.S.P. Units
Niacinamide	4 Milligrams

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First Shipments of Radioisotopes

New horizons of medical and biological research were opened when the Manhattan Engineer District, key organization in the development of the atomic bomb, delivered the first radioactive isotopes to the nation's research institutions.

First peacetime products of the government's huge atomic energy facilities were pea-sized units of Carbon-14, which for the next 10,000 to 25,000 years will emit thirty-seven million beta particles per second, and will be used in research in connection with cancer, diabetes, photosynthesis, carbon deposition in the teeth and bones and in the utilization of fats by the human body.

Created in the chair-reacting uranium pile of Clinton Laboratories, the atomic research center here operated for the government by Monsanto Chemical Company, the unit of Carbon 14 obtained by the hospital weighed only about one ten-thousandth of an ounce. Its half-life is estimated at 10,000 to 25,000 years; in other words, starting with the year 11,946 A.D. the unit (if kept intact) should still be giving out beta particles at an average rate of eighteen and one-half million particles per second. During the elapsed time ten billion particles will have been emitted.

Hundreds of applications for radioactive isotopes, including not only Carbon 14 but also many other of the fifty-odd varieties producible at the Clinton Pile, have been received from the nation's leading research laboratories. It was indicated that from thirty to forty orders will be filled within the immediate future, and that several hundred additional orders are likely to be filled within the next few months.

Requests for radioelements thus far received, suggest widely divergent fields of scientific interest. These include the study of: Mechanisms by which cancer is produced; mechanisms by which plants utilize sunlight and carbon dioxide; disfunction of the thyroid glands, growth and composition of teeth and bones; utilization of sugar in diabetes; utilization of all essential food components; the turnover of iron in anemic conditions; absorption by plants of essential elements from soil; vulcanization and polymerization of rubber; problems associated with radioactive isotopes themselves.

Dr. Paul C. Aebersold, formerly of the Unversity of California Radiation Laboratory, and now chief of the District's Isotopes Branch, explained that plans of the various laboratories contemplate the use of isotopes in two important ways; first, as tracer atoms or "tracers" for following the course of atoms in chemical, biological and technical processes, and secondly, as possible therapeutic agents for treatment of certain special diseases. The value of radioisotopes, however, is considered to reside more in the study of the causes of disease than in treatment. It was emphasized that radioisotope technology is at present directed mainly at fundamental investigations.

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This palatable combination of alkali and alkaline earth bromides provides a prompt, pleasant and rather long lasting sedation.
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Thiamine HCl (B_1)	2.0 mg.
Riboflavin (B_2)	2.0 mg.
Niacinamide	10.0 mg.
Pyridoxine HCl (B_6)	0.1 mg.
Calcium Pantothenate	3.0 mg.
Choline	10.0 mg.
Inositol	5.0 mg.
Folic-acid fractions	10.0 mcg.

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Levulose Available for Research

Dr. Carl W. Borgmann, Engineering Experiment Station, University of Colorado, announced recently that levulose, the simple sugar of high sweetness, will now be available for the first time in sufficient quantities for experimental work by physicians, physiologists, biochemists and others.

The pilot plant, which has been in production for some time, uses an ion exchange process to obtain levulose from common sugar and represents the only commercially feasible method in actual operation. Satisfactory yields of levulose have also been obtained from beet molasses, Dr. Borgmann reported.

Although levulose, often referred to as fructose or fruit sugar, is an important natural sugar with many potential uses in food industries, there has never been enough of it for extensive study because of the high cost and difficulty of separating it by traditional methods. The pilot plant method is relatively simple and cheap. Another advantage of this process is that it achieves a true separation without destroying the dextrose fraction, he stated. The Jerusalem artichoke, goldenrod, chicory and dahlias all contain inulin, a substance which can be treated to obtain levulose, but common sugar seems to be the most promising source.

In addition to its high sweetness, levulose has a higher solubility than either sugar or dextrose. Recent research also suggests that it may have unique and important physiological effects. Lack of availability in the past has hindered research, but studies are now being carried out at the Michael Reese Hospital in Chicago to find out more about the storage of levulose in the body, its use by various organs and its effect on blood lactic acid.

It is known that levulose is absorbed and stored by the liver at two and a half times the rate of dextrose. In the liver it is transformed into glycogen (animal starch) and, as such, provides readily available blood sugar reserves. Glycogen also appears to have a protective action, possibly preventing cirrhosis and guarding the liver against toxic agents. Levulose also evidently plays an important but unknown rôle in early life. English researchers have recently discovered that ninety percent of the blood sugar of embryonic lambs consisted of levulose.

In human metabolism common sugar breaks down into forms of its component parts. Recent disclosures suggest that sugar may actually be split directly to dextrose phosphate and levulose. The rate of absorption of levulose is being studied by Dr. I. M. Rabinowitch, Montreal General Hospital, who has recently shown the value of higher carbohydrate diets for diabetics. In this connection, levulose may prove particularly valuable.

More knowledge about the function of levulose in human nutrition will be forthcoming from the tracer or "tagged" atom technique. By building levulose with atoms of radioactive Carbon 14, it will be possible to follow the course of this sugar through various body organs, and learn more about its deposition and utilization.

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or that occurring as a result of a neurosis or reflexly from relapsed kidney or uterine misplacement

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will be found highly efficient by reason of its marked sedative powers.
Reflex phenomena are a definite indication for PASADYNE.

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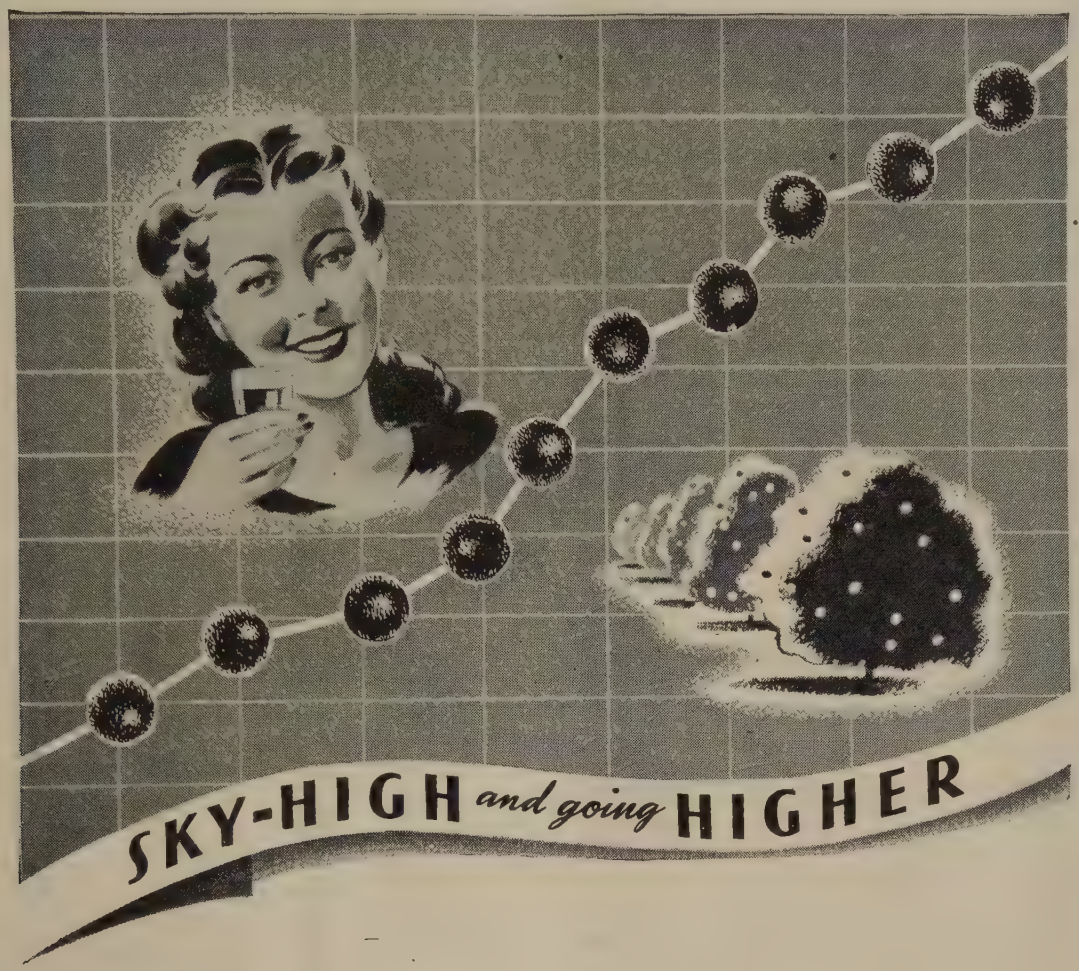

It's a "runaway market" on citrus fruits — and the worst is yet to come. Even when prepared at home, the 8 ounces of orange juice required to give an adult his optimal daily intake of vitamin C costs from 12c to 20c. This means a cost of about $3.50 to $6.00 per person each month.

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SODASCORBATE Tablets are not only much less expensive than orange juice, but offer distinct advantages to your patients who are unable to tolerate ordinary vitamin C. The *only* sodium ascorbate in *dry,* neutral form, SODASCORBATE permits full and frequent doses of vitamin C without the gastric irritation, acid-shift or other undesired after-effects that so often result from large doses of straight ascorbic acid.

The average dose for adults is one tablet t.i.d.; or as indicated by the condition. For children under 12, one-half tablet. For babies or very young children, ¼ to ½ tablet may be crushed and dissolved in milk.

Supplied in bottles of 40 and 100 tablets, as well as in "hospital-size" bottle of 500 tablets. For professional samples and covering literature, sign and mail coupon.

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Shambaugh, G. E., Jr.: J. Iowa M. Soc. 31:375.

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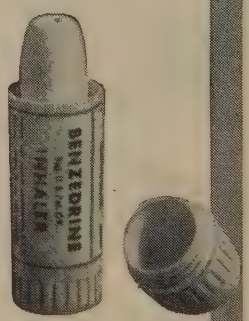

Benzedrine Inhaler
a better means of nasal medication

ACCEPTED AMERICAN MEDICAL ASSOCIATION

Smith, Kline & French Laboratories, Philadelphia, Pa.

Mass Immunization to Combat Diphtheria

According to *Health News,* August 19, 1946, eighteen upstate communities now have at least seventy percent of their children under five years of age immunized against diphtheria; these figures were taken from records on file in the State Department of Health.

The continuing rise in diphtheria prevalence in the United States, as well as in Europe, makes intensification of mass immunization programs imperative. The increase in both diphtheria morbidity and mortality in upstate New York which began in 1945 has continued in 1946. A total of 231 cases and twenty-one deaths has been reported thus far this year, the highest number of each since 1934.

In view of this upward trend, artificial immunization of preschool children—at least seventy percent—and reimmunization on entrance to school are urgently needed for the maintenance of adequate protection.

In areas of increased diphtheria prevalence, innoculation or reinoculation of all children through high school age who have not been so treated within the three years immediately preceding is recommended. Older children and adults should be inoculated with precaution and preferably only after Schick testing.

The situation certainly warrants reemphasis of the importance of administering diphtheria antitoxin in all suspected diphtheria cases without attempting therapeutic tests with other agents or awaiting the results of bacterial examination of nose and throat cultures.

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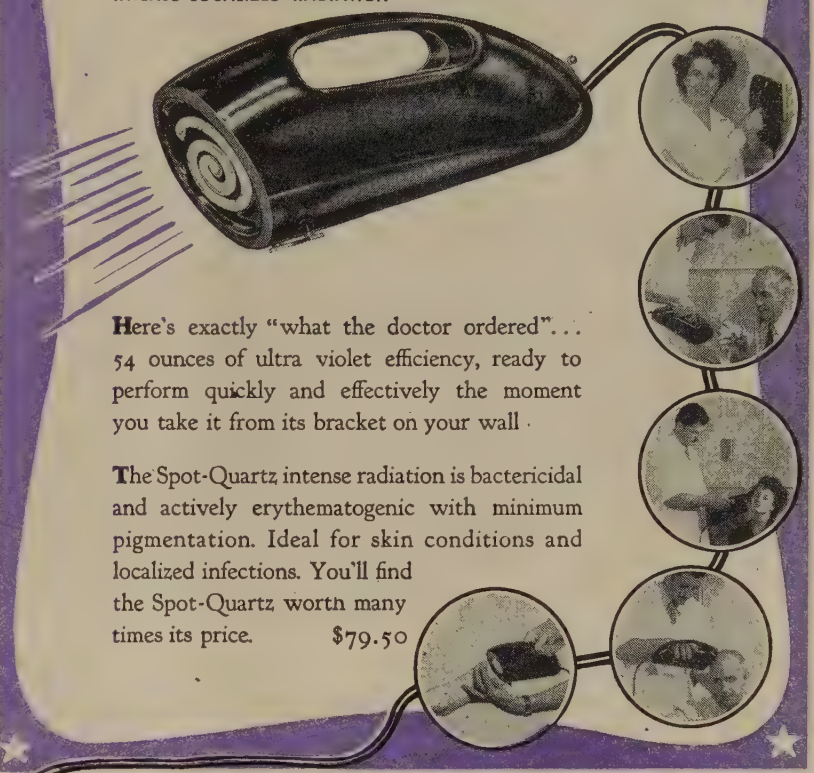

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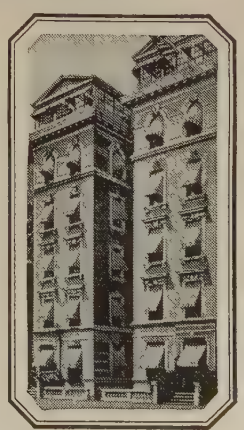

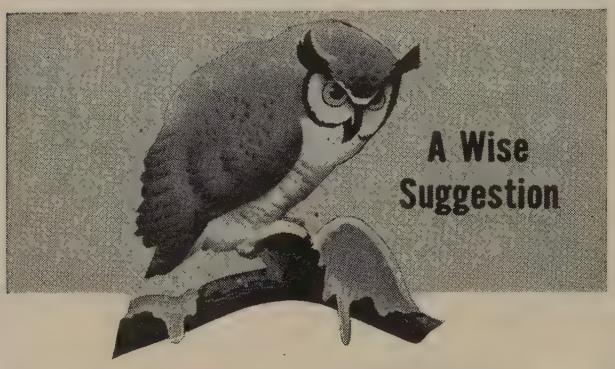

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a valuable Therapy for distressing COUGHS in

- Acute and Chronic Bronchitis
- Paroxysms of Bronchial Asthma
- Dry Catarrhal Coughs
- Whooping Cough
- Smoker's Cough

What Pertussin is: *An extract of thyme* (Process Taeschner) is the single therapeutic element in Pertussin. It is quickly absorbed and carried to the secretomotor center. Pertussin is highly beneficial in easing cough paroxysms not due to organic disease.

What Pertussin does: 1. Pertussin stimulates secretion of the tracheobronchial glands to relieve dryness. 2. It facilitates removal of mucus accumulation. 3. It improves ciliary action. 4. It exerts a sedative effect on irritated mucous membrane.

Pertussin is entirely free from undesirable side action. It is pleasant in taste, and well tolerated.

PERTUSSIN

For Children, Adults and the Aged

SEECK & KADE, INC. NEW YORK 13, N. Y.

Use of Streptomycin in Veterans Administration Hospitals

According to a report by Dr. Paul R. Hawley, chief medical director, Veterans Administration Hospitals, streptomycin has been successfully used in various veteran hospitals in the treatment of kidney and bladder infections, tularemia, abdominal infections, (peritonitis) and tuberculous meningitis.

Preliminary reports from Veterans Administration hospitals indicate that approximately three out of every four cases receiving streptomycin have recovered or shown marked improvement, Dr. Hawley said.

Approximately 200 cases have been treated in Veterans Administration hospitals since early March when Civilian Production Administration undertook to allocate the country's scant streptomycin supplies for use of the Army, Navy, U. S. Public Health Service, National Research Council and Veterans Administration.

Previous to the introduction of streptomycin, there was no effective treatment for tularemia or for kidney and bladder infections owing to certain bacteria which do not respond to penicillin or the sulfonamide drugs.

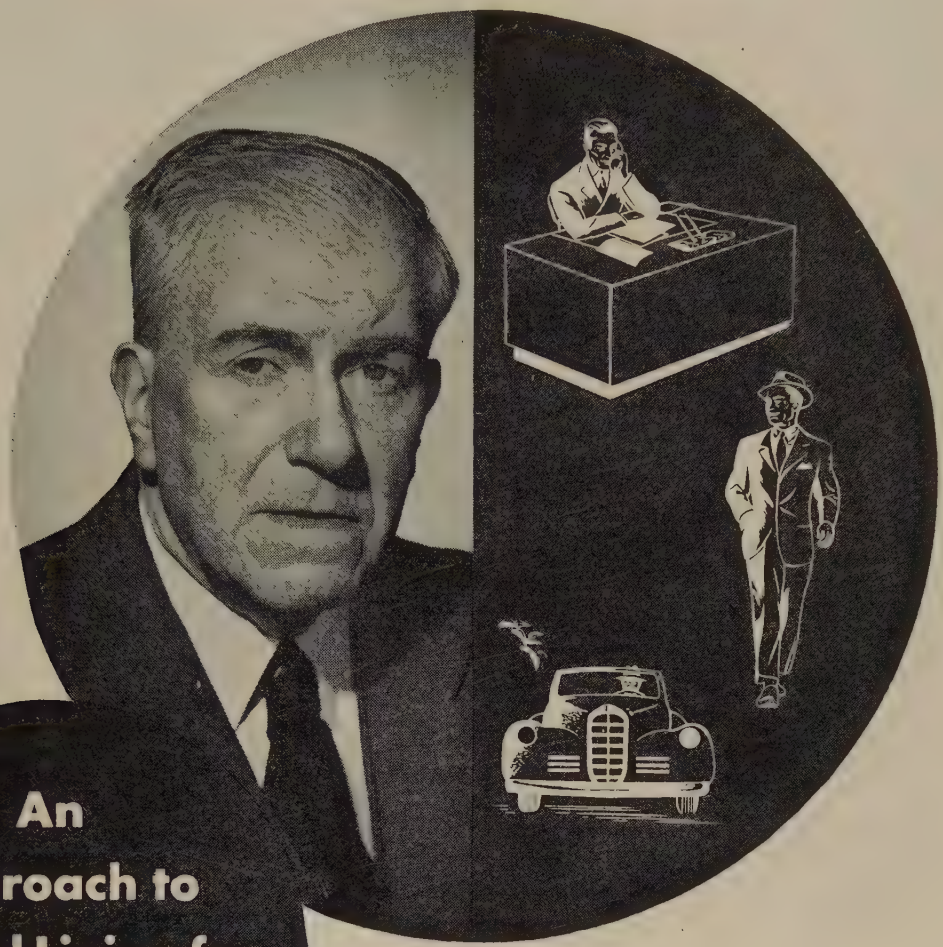
Eleven cases of tularemia in Veterans Administration hospitals have responded to streptomycin without a single death. The drug has been especially useful in treating kidney and bladder infections in cases of spinal cord injuries causing paralysis (paraplegics).

Ten cases of abdominal infections (peritonitis), occuring after ruptured appendices, have been treated in Veterans Administration hospitals with generally favorable results; however Veterans Administration doctors said it is possible these patients would have recovered without the drug.

Early results of the treatment in four cases of tuberculous meningitis, a uniformly fatal disease, have been sufficiently remarkable for Veterans Administration to instruct its hospitals to inform the central office in Washington, D. C. immediately when such a diagnosis is made so that a supply of streptomycin may be rushed to the patient by air express.

Except for tuberculous meningitis, medical science has not yet determined which other types of tuberculosis can be treated effectively with streptomycin. It is known that the drug, even experimentally, has not yet replaced any of the standard forms for treating tuberculosis, such as rest and collapse of the lungs. The Veterans Administration is keeping abreast of developments in this field with the National Research Council and other federal services.

"In comparison with other diseases, the amount of streptomycin required to treat tuberculosis is enormous. In addition, no one knows with certainty whether streptomycin is going to be useful in treatment of all types of tuberculosis", Dr. Hawley stated.



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New Sulfathiazole Acid Jelly

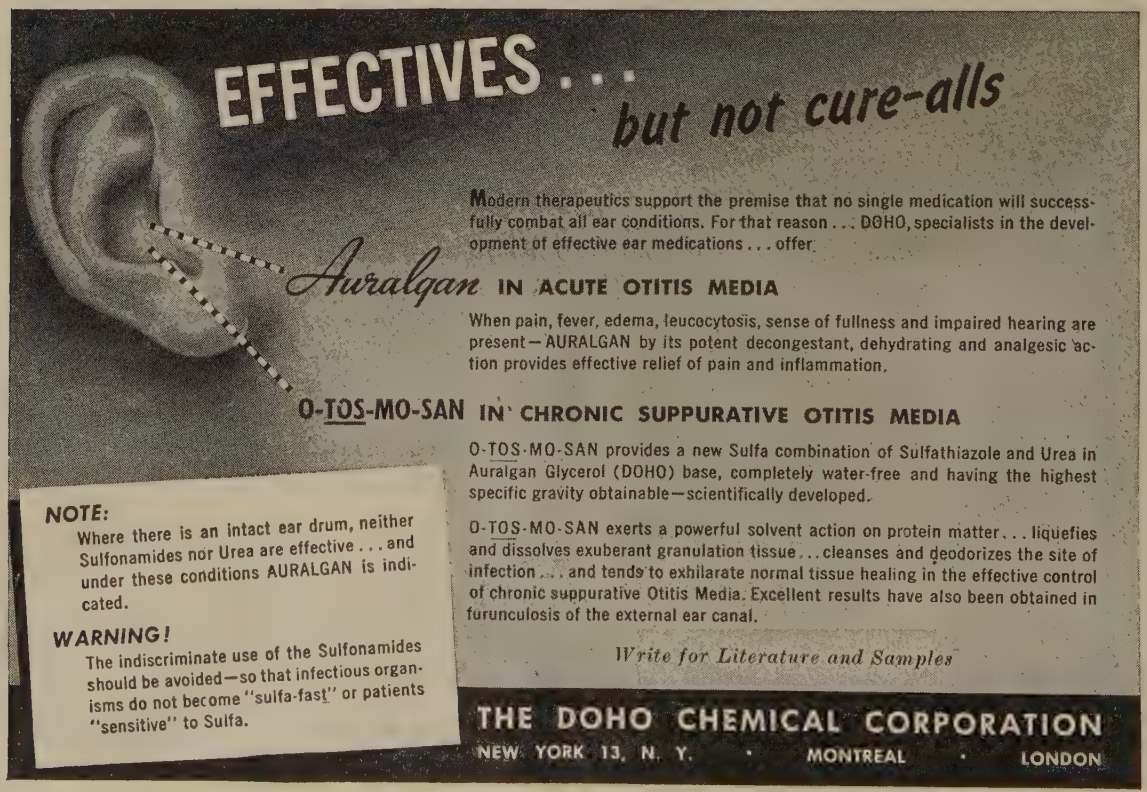
In the July 1946 issue of the *American Journal of Obstetrics and Gynecology,* Dr. Samuel L. Siegler in a paper entitled "A new method of treatment for vaginitis and cervicitis", described a new anti-vaginitis sulfathiazole polyethylene glycol acid jelly. The jelly is nonirritating, nonstaining and of an agreeable odor. It spreads over the cervical and vaginal surfaces and is completely soluble in the secretions and does not easily leak out of the vagina unless the discharge is profuse. It has a mild but definite astringent effect on the vaginal mucosa, according to Dr. Siegler. He further pointed out that use of the jelly has resulted in excellent control of vaginitis of trichomonal, monilial, gonococcal and nonspecific origin in ninety-three percent of the cases studied, and a permanent cure in eighty-three percent. Use of the jelly alone has given good results in the management of cervical infections in twenty-two percent of the cases treated.

The period of convalescence can be markedly shortened and annoying symptoms reduced by use of the jelly before and after such procedures as conization, coagulation, cautery, plastic repairs and other intravaginal surgery. Healing was complete within an average time of five weeks with a minimum of sequelae, the author stated. The convenience and simplicity of the single-dose disposable paper applicator facilitates intravaginal medication in the office and in the patient's home.

New Preparations

The American Pharmaceutical Manufacturers' Association has announced two new preparations: Vertavis, a new clinically tested agent for control of hypertension, is being introduced to the medical profession by Irwin, Neisler & Company, Decatur, Ill. The product provides a biologically standardized Veratrum Viride, each tablet containing ten Craw Units of the whole powdered drug. Clinical tests over a two year period indicate a very low incidence of side reactions, however mild, with substantial falls in blood pressure. No tolerance is recorded nor are toxic accumulations seen, according to the manufacturer.

The second preparation, Cholanox, is designed for safe and better medical management of biliary disease, and was developed by the Maltbie Chemical Company, Newark, N. J. This product, which has been widely heralded in clinical trials, is a combination of equal parts ketocholanic acide (ninety percent dehydrocholic acid) and purified, dehydrated whole bile (substantially the sodium salts of glycocholic and taurocholic acids, plus the complexes or coordination compounds of desoxycholic acid). When used together with the appropriate dietary regimen and antispasmodic medication as required, the value of Cholanox can be utilized to its fullest extent in the treatment of chronic cholecystitis, noncalculous cholangitis, biliary dyskinesia and postoperative treatment.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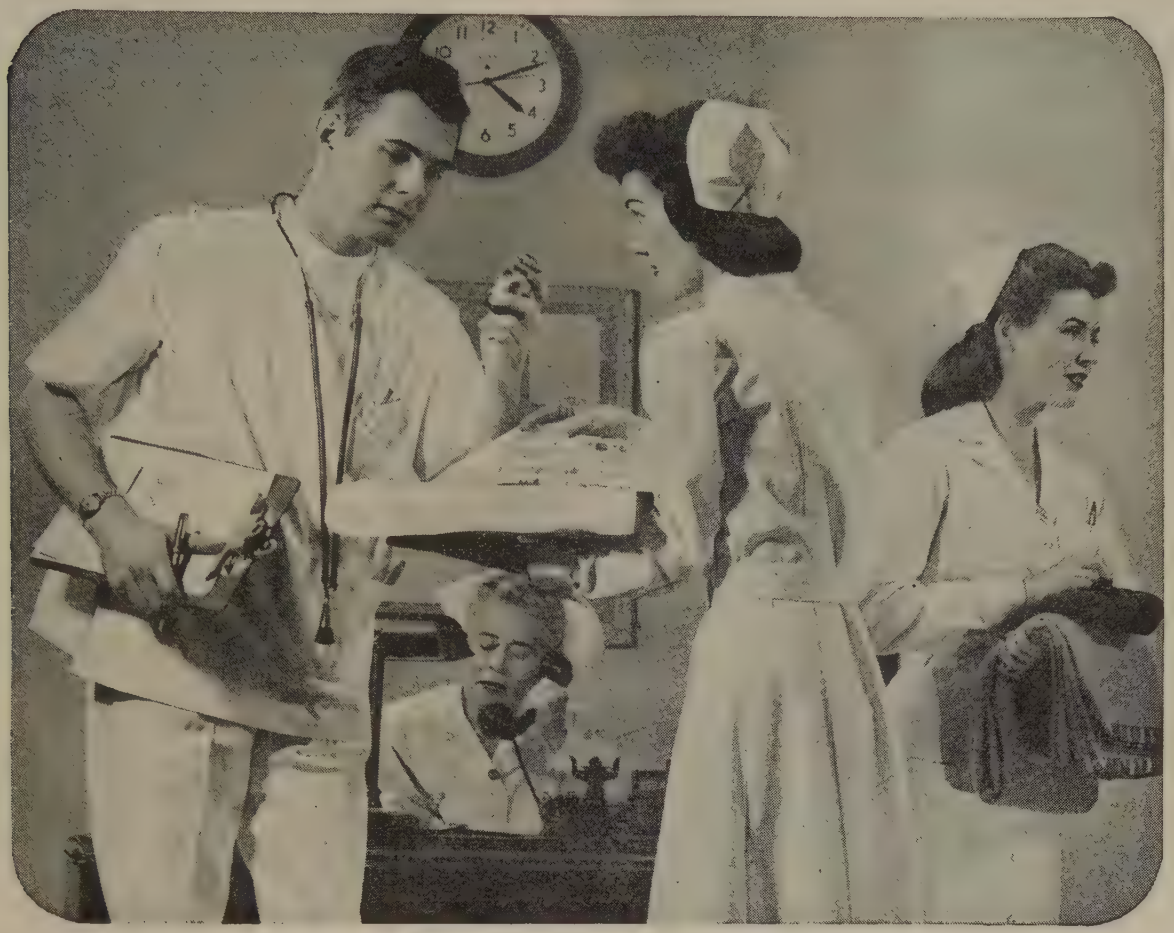

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Modernization of Institutional Facilities

Dr. Frederick MacCurdy, state commissioner of mental hygiene, pointed out a program to modernize and expand the state's institutional facilities so that overcrowding may be eliminated and provision made for more adequate care of all patients admitted. The department has developed plans to further improve the standards of care and treatment as well as prevention of mental disorders.

These plans include: Modern medical and surgical buildings at sixteen institutions, intensified research in the causes and cure of mental illness, increased use of shock therapies, special provision for the care of tuberculous mental patients at four regional centers, more staff housing, better training facilities to meet the need for more psychiatric, nursing and social service personnel, additional clinics for prevention and after-care, extension of family care and improved food service for patients and employees.

The building program for the mental institutions will be the largest item in the state departmental construction program as mapped by the planning commission. As soon as materials and manpower become available, the department will launch a program of construction and reconstruction at the state's twenty-eight mental institutions which have been approved by the planning commission.

Primary attention is being given to buildings to be occupied by patients, but plans have also been made for many new service facilities. The total program contemplates the following new construction for the housing of patients: Sixteen medical and surgical and reception units, ten projects for disturbed patients, thirty-two projects for infirm patients, fifteen projects for patients requiring continued treatment, four projects for tuberculous patients, and three new special units at state hospitals for the treatment of behavior and personality disorders in children. When the projected new facilities are constructed, the state will be able to care for mental defectives of all ages.

The construction of the special units for mental patients having tuberculosis will make better segregation possible and will concentrate specialized treatment facilities for this condition. It will also permit the closing at some institutions of special tuberculosis wards which had to be set up in buildings not planned for that purpose.

Among other important factors is the erection of one-family houses which will provide living accommodations for staff officers and will correct an unfortunate condition under which some staff members must live in buildings designed for and being used by patients. Modern facilities for storage and refrigeration are to be furnished at several institutions and power plant facilities are to be improved and enlarged to accommodate the expansion.

"The program," Dr. MacCurdy concluded, "contemplates new construction at every one of the state's twenty-eight mental institutions, with a view to providing ultimately an efficient, modern plant for the adequate care and treatment of all of the state's mentally afflicted wards."

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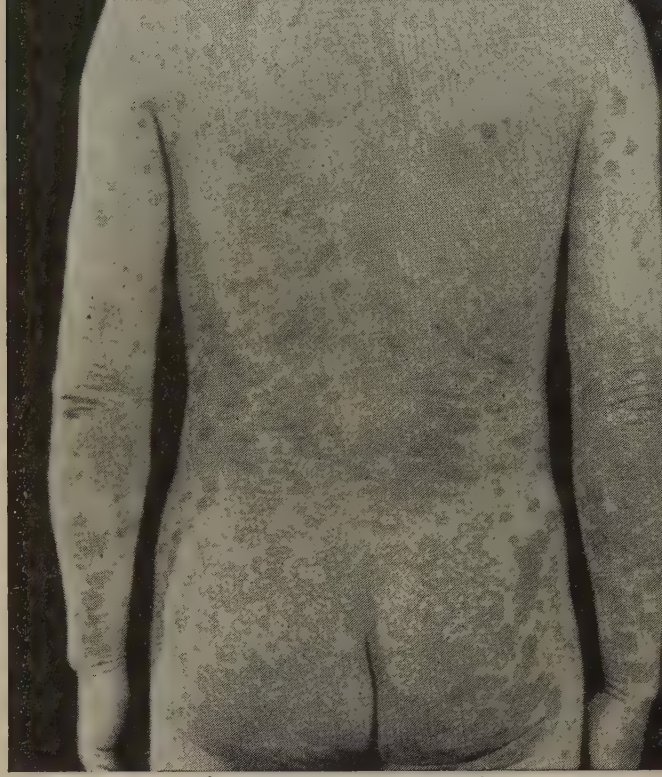

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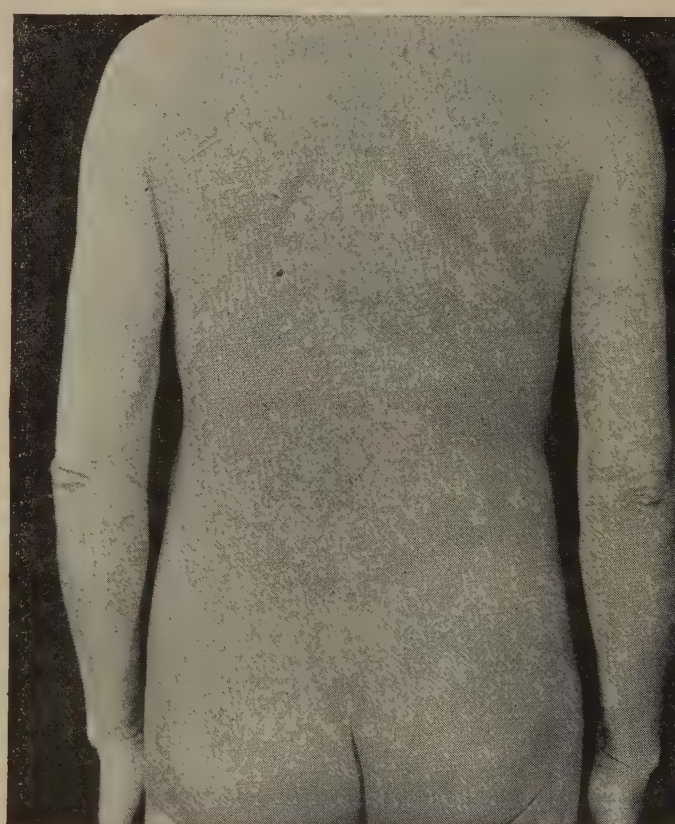

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Critique

The American College and its rulers Did you ever read that book by Dr. K. E. Kirkpatrick? It is worth while even yet.

Nicotine and mice C. H. Thienes in 1929 injected nicotine subcutaneously into fourteen growing mice twice daily, in doses sufficient to cause symptoms referable to the central nervous system. An equal volume of 0.85 percent sodium chloride was injected into eighteen controls. A marked decrease in susceptibility to nicotine soon developed as the mice grew older and larger, and the poison had no apparent effect on growth.

Research About 15 years ago around $200,000,000 was spent annually in research in the U. S. This sum was huge—sufficient to build about five airplane carriers in those remote days. It compared with out total national income of 80 to 90 billion dollars. It amounted to $2.50 per thousand of that income, and only 25 cents per thousand of it was spent on research in pure science.

Chinese An expert in the literature of the Chinese at the Library of Congress says of Confucius (the real one, not old "Confucius-say") and his philosophy, that the latter is founded on the ideas of benevolence, self-culture, and self-discipline. There is an entire lack of compulsion about it, but it is pervaded with humanism. The Chinese need neither priest nor soldier to keep them in order. They have lived in closest contact with their fellows for so many centuries that they have been compelled to achieve order by self-discipline. Tolerance is engendered by their way of life. There is no system of rewards and punishments in Chinese native religion and no sense of original sin ever bothered this race. The Chinese believe in form, in reverence to ancestors (or to something or other), and place more emphasis upon the manner in which results are attained than in the actual results themselves.

Raw eggs The myth still persists that raw eggs are very digestible. This is indeed a durable and hardy fallacy. Scheunert and Wagner made experiments on young, growing rats with raw and boiled egg yolks sixteen or seventeen years ago; it became evident that the nutritive value of raw egg yolks was not superior to that of boiled egg yolks. (*Deutsche medizinische Wochenschrift* 55:395.) Friedberger and Abraham stated that, if eggs only were fed to animals, they frequently suffered toxic effects. Alopecia developed in rats, and this was especially true if the eggs were fed raw, or after heating less than ten minutes. When boiled 20-30 minutes toxic effects disappeared. (Ibid. 55:393.). In general a coddled egg is digested much better than a raw one, and raw eggs resist complete digestion much more tenaciously than do hard-boiled, or old-fashioned saloon eggs.

Physiology A London doctor commented in the *Medical Officer* for April 27, 1929 that the physiology then taught general practitioners was about as much use to him as botany would later be to a practical farmer. He said modern medical education specialized increasingly and came under experts in departmentalized medicine, not educational experts. The general practitioner should, however, be a man versed in physiological understanding, with a mind trained to appreciate research, a thorough knowledge of common ailments, and only such knowledge of curiosities as would enable him to refer them to the proper specialist. Where can he get the education he needs even today?

Diet and disease In the then *Medical Journal and Record*, of May 15, 1929, Max Einhorn discussed the case of a woman of thirty-eight who had complained of digestive disturbances for five or six years, and who had been unable for about six months to partake of even the lightest foods with comfort. She had to stop eating after a few mouthfuls because swallowing became impossible. She proved to be a Fletcherite (remember?) and she simply tired herself out chewing each mouthful as often as brother Fletcher recommended. There was no organic disease and correction of the habit cured her. Einhorn said that while we are in health our sensations and desires are sufficient guides to the nutriment we need, and that even the diet of the chronically ill should always resemble that of healthy normals just as nearly as possible.

Pellagra Some aspects of the development of pellagra are still mystifying, though many things have been cleared up since Goldberger's day. Henry C. Sherman, for a while chief of the Bureau of Human Nutrition and Home Economics in the Department of Agriculture, discussed this problem in the *American Journal of Public Health* for May 1929. It is interesting to look back and see where we were then. Pellagra was then a terribly complicated question and many still held to the plausible theory that it was infectious in nature. Goldberger at that time attributed susceptibility to pellagra to inadequacy in the amount or kind of dietary protein, possibly a shortage of some essential amino acid, though he also held that the "heat-stable factor" of vitamin B prevented the disease. Others used butterfat, egg yolk, carrots, or crystalline carotine to treat pellagra. Cod-liver oil was said to be no good, but unpeeled carrots were excellent. It seemed two or more related deficiencies in diet were involved, according to Sherman in 1929. Butter and carrots looked like good preventives. But the U. S. Public Health Service remarked wheat germ was quite effective, and dairy products also were effective, though that did not lend itself to interpretation along vitamin and protein lines. So the problem still remained and much research had to be done to clear it up. Much research has been done and it isn't wholly cleared up even yet, as reading of comparatively recent issues of *Nutrition Reviews* indicates.

The Critic

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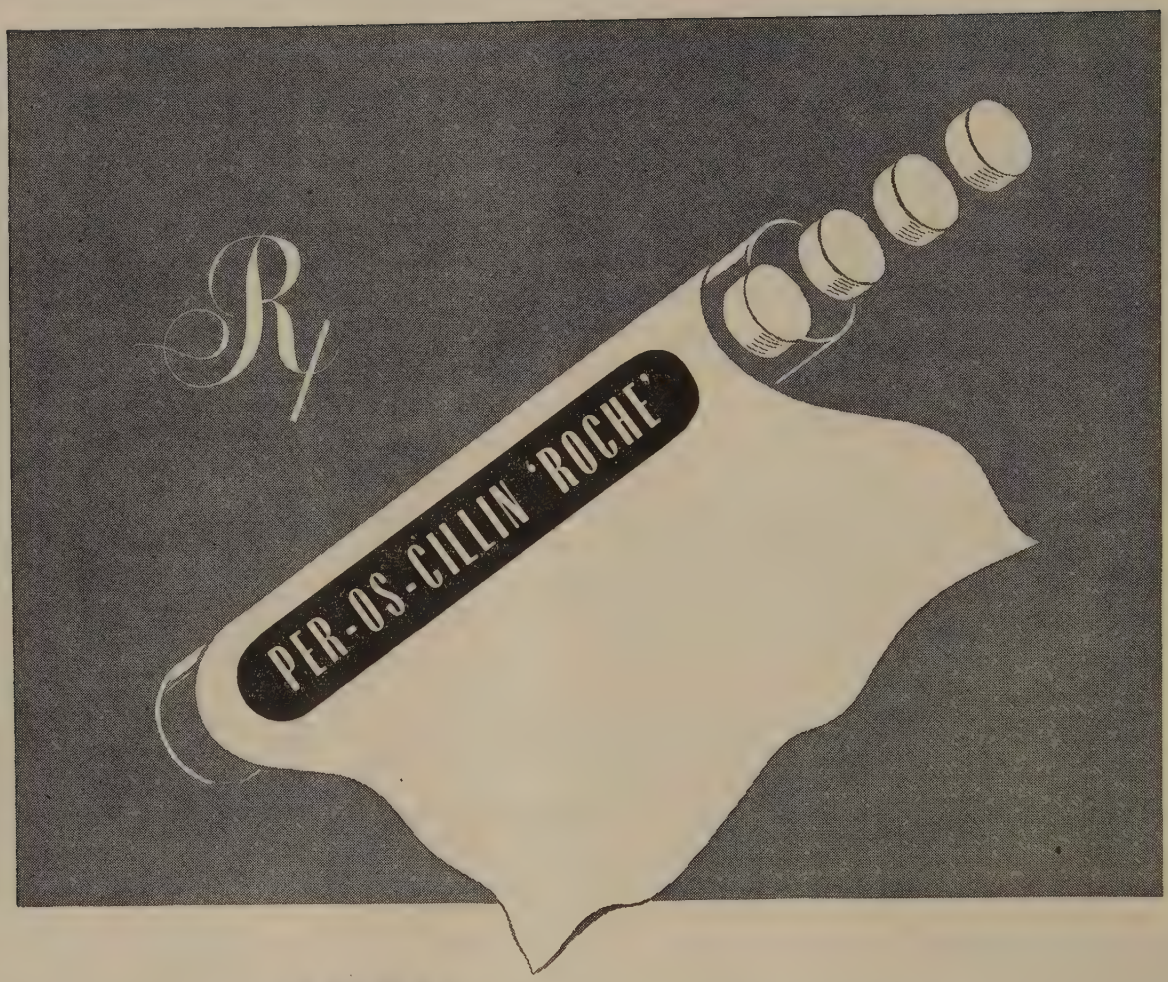

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* For approved uses of oral penicillin see C. S. Keefer, et al., J.A.M.A., 128:1161, 1945

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VOL. 159, No. 10 OCTOBER 1946 WHOLE No. 2765

PSYCHOSOMATIC MEDICINE*

B. LIBER, M.D.

New York, N.Y.

For the past centuries, and until recently, the inclination prevailed to separate the mind from the body. This was possible so long as the mind was considered identical with the soul, but within the last fifty years, the trend has been toward the opposite. Most students of the mind are making an effort to accentuate the unity of the body and the mind; to show that they are one and the same thing and that they can not be distinguished from one another. This tendency, although it existed in the past, became more emphasized among modern psychiatrists and originated mainly from those who taught that true and complete psychiatry was really biopsychiatry, as they called it, based on psychobiology instead of on psychology. This new nomenclature, however, seems to produce the wrong effect. The more it tries to prove the oneness and sameness of soma and psyche, the more it seems to sever them. Even the freshly coined term "psychosomatic" has the defect of mentioning both these entities apart, although in one word, as well as the error of conveying the idea that psychosomatic medicine is a brand new science, a never heard-of healing art. Some psychiatrists have attempted to remedy this misunderstanding by using the expression "integral medicine", which, at first glance seems to come closer to the proper meaning, but which may defeat its own purpose and prove to be a worse evil than the one it aims to correct. Indeed, most doctors and surely most laymen may get the impression that it signifies the science of medicine of the body as a whole and may never think of it as including the mind.

The soul is an obsolete term that should be discarded, it is unscientific and mystifying. There is no harm in using it in the old loose way if one is aware of its past meaning. Until recently it denoted the "spiritual" part of the human being and it is still employed by many people in the same sense, although they would be embarrassed if they had to define the "spirit" with some degree of exactness. The "soul" was not regarded as an integral part of the body; it was housed in it or superimposed on it and people believed that both the body and the soul, two opposite entities, might become separated from each other, which happened definitely and inalterably at the end of life. The animals were supposed to have no soul, this was to signify their fundamental difference from man, although, curiously enough, the very word "animal" is derived from a term the meaning of which is akin to soul. Some —masculine—authorities even decreed that women failed to possess the precious soul which was reserved to men only.

But we know now that, while "mind" is a more comprehensive term than "soul", it represents something less elusive, more tangible, more concrete, although not like tissue or matter.

The mind is not temporarily contained in the body and does not continue an eternal independent life after corporal death. The mind is intimately connected with the body. It is a product, a secretion, as it were, of the body. But unlike the visible, palpable secretions, it is a finer, a more subtle elaboration. It does not exist anywhere for one moment without the body and it dies completely at the death of the latter. The body *is* the mind. Every particle of the body is indissolubly penetrated by the mind.

If we differentiate mind and body, it is for the sake of convenience only. The mind is the most refined and the most exposed function of the body. Therefore, it is the most vulnerable part and requires even greater care. Mental contacts may be distant, without boundaries, indeed endless and going out into the infinite. That is why our mind is shaped by everything and everybody and each one of us has a share in shaping other minds. That is why conditions in our immediate neighborhood as well as anywhere else on the globe have so much to do with our mental state, and the healthier they are, the healthier we are.

The mind is not subordinated to the body, nor the body to the mind, but both body and mind are interdependent. That is why the health of one depends on the health of the other and cannot be conceived without the other.

While the seat of the mental faculties is in the brain mainly, they are also situated, to a less accentuated degree, in the spinal cord, in the rest of the nervous system, in the coarser organs—of respiration, digestion, elimination and the senses. They

*Paper presented before the East New York Medical Society, January 7, 1946.

reach the tiniest portions of our huge anatomical colony. There is a minute mind in each cell and those who invented the words "cell intelligence" were just as scientific as Virchow who was the first to be interested in cell pathology.

The mind is not monopolized by any one portion of the nervous system or by any organ. The brain may coordinate, associate and connect facts, feelings, thoughts and ideas. But it cannot do it without the entire nervous system, the emissaries of which reach into the remotest and apparently most insignificant particles of the organs and tissues. The spinal cord is not a mere appendage of the brain. It is older than the latter in the same sense that the skull is a product of a later evolution of the vertebral column.

The brainless beings or those with a faintly developed brain also think and their thinking is of the same nature as that of the brainy animals; there is simply less of it, or it is clumsier. But there are stimuli and reactions and these are dependent on a nervous system, no matter how primitive, or, on a still lower scale, on something equivalent that plays the same rôle or that is vaguely distributed in the entire body or cell or groups of cells. In higher animals the comparatively primitive functions of the more peripheral nervous system persist in addition to the work of the brain. If we want to be precise, we cannot deny some sort of a mind even to plants, as the simplest forms of adjustment to environment, which we may reduce to a submission to photochemical and physiomechanical laws are really at the basis of the mind or, at any rate, form its inception. And in that respect there are living beings who are regarded as belonging to the animal kingdom and whose functioning and relationship to the environment are not on a higher level than those of the plants.

In the last analysis we cannot be sure how much our mind is dependent on the same obscure adjustment as that of the least developed being. Indeed, it is impossible to differentiate our thinking from the maze of internal and external influences that surround us. The highest mind may be activated or slowed down by sunshine, cloudiness, noise, quiet, cold and heat, quite in the same way as the leaves or petals of a plant are forced to open or close or move by the sunrays, or an amoeba must change its shape under certain contacts, or a frog has to begin its vociferous music in the early spring, or the cow will be restless at the approach of a storm. The most superior intelligences are often entirely at the behest of sexual necessities and a great genius may be led by the elementary need of food and shelter and be transformed by some chronic illness.

The mind is formed through our experiences, inherited and recently past, through our connection with our interior, individual or organic world and with the world at large, near and distant and extremely distant. Besides the brain, spinal cord and the nerve fibers which, no matter how far they go, are only prolongations of the central nervous system or contributors to it, we have the sympathetic nervous system, which, while enjoying some comparative independence, is also related to the former. The endocrine glands and the semiendocrine glands have their share in begetting or engendering and shaping the mind. Reflex movements are composite, complicated short cut functions which in essence belong to a sort of mental action differing only in form from what we call the higher or reasoned thinking.

The ability of the heart to enjoy a relative independence endows it with a certain mind of its own. That is expressed in its muscular involuntary fibres, in its own blood circulation, in its own miniature nervous system, as it were. On the other hand the heart and the rest of the body—and of the mind, are inextricably interrelated. The poets, for thousands of years, were not entirely wrong or unscientific when they mixed the heart with all the events of which they sang and described. This organ still looms large in many works of art as well as in the most prosaic tales of any maiden's love and so it figures in the best as well as the cheapest songs and in all languages. Is there an evening when "my heart", *"mi corazon" "il mio cuore", "oh, mon coeur"* or *"ach, mein Herz"* is not blared forth on the radio, in the movie, opera, operetta or musical comedy? Emotions do make it "palpitate"—so much so that to the uninitiated it may become difficult to distinguish between the mind of the heart and that of the brain or between sentiment and reason. This particular behavior of the heart may play us tricks and instead of being helpful it may betray us. So do other emotional processes which we cannot control through the central mind, by reason, or by what is called "will power." Blushing may often be necessary for our welfare and it may have originated as a defense mechanism, but because of its partial autonomy it may create confusion and result in self-treason and great harm to ourselves.

If we continue the search of this interrelationship between the mind and the body, we may have to change the question "Where is the mind?" to another one: "Where is the mind not? Where, in the body, is there a spot which is not pervaded by the mind or which is entirely devoid of it?" Perhaps these introductory notes have been too elementary in convincing you about the place and importance of the mind, but I feel it necessary for all of us to go back to thoughts that might help us to see illness—all illness—from the viewpoint both of the body and of the mind. That is extremely momentous to the psychiatrist who, desiring to understand the mental problems of his patients, may forget an underlying physical disturbance and also to the physician absorbed in solving an organic riddle, in making a diagnosis and in finding the therapy, but disregarding a concomitant disorder of the mind.

The nonpsychiatrist who is completely imbued with some visible symptoms only, may, by ignoring an outstanding mental difficulty, make even a greater mistake than his psychiatric colleague who neglects a physical trouble.

To me it is clear that no disease of any kind is completely healed if it is not mentally cured as well —and that goes for all the specialties and the general practice also.

I know, some of you have this objection in mind: "What does it matter what a patient thinks, if his obnoxious calculi have been removed?" or the reverse: "How can a neurotic's fear of a disease induce the disease?" But the former may still be sick—or even worse than before the operation—and unhappy because his ideas connected with his condition have not been extracted. By some friendly teaching and by inspiring him with confidence in himself and in his doctor, by explaining his accompanying mental distress, he may be led, if not to normality, at least to adequacy. As to the neurotic, while he cannot bring on a physical illness, he is not well, no matter what mental excuse, unknown to his conscious thinking, he has for his condition. He can also, and often does, deceive his doctor or make the diagnosis difficult by the mental element that complicates the situation. That element may be clear enough, but too subtle for any pathologist to discover *post mortem,* for any clinician to find *in vivo,* or *in vitro* in the laboratory, or on films through roentgen rays. One must be aware of its existence or one must at least suspect it.

Psychosomatic methods are not new, although until a short time ago no one had attempted to systematize them. All worthwhile physicians, beginning from the dawn of human society, perhaps from the medicine-man of the primitive tribe, continuing through the more or less scientific priesthealers of antiquity around the altars of the gods, and the doctors of the medical renaissance of the last centuries, sought to comprehend the patient as a whole, with his emotions and family environment. Sometimes they went further trying to understand his social background; many did not, and then they were harmful bunglers and failures. Quacks have often taken successful advantage of their knowledge of human nature, that is, of practical psychology, and used it to cover up their ignorance of medicine.

Sometimes the psychiatrist leaned backward and, reluctant to explain abnormal mental phenomena by pathological thinking alone, went to the other extreme and regarded all the mental aberrations as caused by actual organic lesions, usually in the brain, although in the majority of the cases this could never be verified. Those were the organicists. However we need not follow extremists of one kind or another in order to study the organism as a whole, in its somatic and psychic aspects.

I can foresee that, when all the research work in these matters is done, not only the psychiatrists, but the entire profession will agree that in the final analysis all medicine, as well as all psychiatry, is nothing but psychosomatic medicine. The effect will be to bring our specialty closer to the other branches of our science and to fill the gap that exists now and interferes with proper cooperation.

Psychic Disturbances

When we come to the psychic symptoms in their relation to somatic disease, the first and most universal is fear. It is either an independent factor causing or aggravating mental or physical illness, or both, or it is a contributory or precipitating cause. It may be an effect of any illness and it always accompanies, more or less, all illnesses. There are, of course, variations and degrees of fear, from mere awareness and slight apprehension to panic, due to exaggerated or entirely imaginary danger. Now fear, as such, is useful or necessary, as useful and necessary as pain. It is a normal, salutary—intelligent or instinctive—mental state that warns us of danger, forces us to take measures and saves us from accidents and mishaps. Pain is also an indicator of trouble in the body and it helps to prevent further inroads of discomfort or disease. But, like anything needful and practical, these friendly feelings will do damage when there is too much of the good, that is in case of excess. Inordinate fear, immoderate dread of pain are often diseases in themselves. But when they mingle with a physical ailment, we not only have two conditions, instead of one, to combat, but each one of them is greatly magnified.

A more concrete example of the interaction between mind and body is the frequent mental disturbance in cases of coarse tumors and concrete abscesses of certain portions of the brain and the restoration of correct thinking after the removal of the physical obstacle. We cannot find its reverse, however, at least as much as we know, that is the psychogenic causation of an actual cerebral lesion as a result of psychopathic disease.

That an organ may be normal and its function may be upset has been known for a long time. We have all agreed to call such a condition "functional". And yet we cannot be absolutely certain that "functional" corresponds to mental or to mental alone. No one will vouch whether in those cases the organ is not somewhat, perhaps slightly, but not demonstrably, damaged and that our ignorance or our imperfect methods do not interfere with a correct diagnosis. If the patient's mental state is the first hint or token of an impairment of this kind, we should be grateful to it.

The heart and the heart region are often the most sensitive places about which people complain—sometimes legitimately and to our satisfaction, since they attract our attention to an incipient disease, but sometimes in spite of the fact that none of our skills can find any disorder with that organ—or perhaps with any other organ. There may be a sudden pain following the shock of learning some cheerless news. The description may be perfectly reliable and again none of the means at our disposal may show anything abnormal organically. Who can take it upon himself to say with certainty that the patient is wrong and the doctor is right? Or there may be nothing but socalled "heart palpitation" and we may sneer at it because it is apparently due to a neurotic or psychoneurotic condition. But, whether we call it a disease or not, it may be the expression of a real tachycardia or arythmia. Which, in such cases, is the illness? Which is the cause? Which, the effect? These questions, where possible, are to be

answered by the general practitioner or by the heart specialist, because it is to them, rather than to the psychiatrist, that the patients with such complaints go first.

On the other hand it happens that when we, physicians as a whole, are alarmed about a patient's heart condition and when we let him know our opinion, he or she becomes mentally aroused. Do we not all recall cases of people scared by the insurance doctor's refusal to accept them on account of their heart ailment about which they had never heard before? Sometimes this is the beginning of a long lasting period of mental anguish. In all such situations the physician's position is quite difficult. Shall he avoid telling the patient about his condition and risk the mistakes that may follow—in matters of food, drink, exercise, etc.? Or is the doctor to reveal the situation? May not the patient interpret it or misinterpret it in his own way, and then add an exaggerated fear to his physical handicaps and difficulties?

Some authors recently found a humorous, but alas, true name for an ailment created under such circumstances—the "iatrogenic heart disease", meaning a nonexistent illness involuntarily created by the physician, by scaring the patient. The symptoms of this socalled sickness are referred to the heart, but the cause is purely mental.

Hypertension

Hypertension seems to be a somatic irregularity. But sometimes we gain the impression that it is an effect of a mental state—either permanently or temporarily. Can we be certain that the personality and mental makeup does not depend, at least partly, on the arterial tension? And does not the mental activity and reaction become modified as a result of a change in tension?

One fifty year old woman, whose blood pressure fluctuated between 160 over 110 and 275 over 140, was kept alive for twenty years by the mere moral authority of her doctor, as medication never had any appreciable effect. I am not sure whether her case should have been called an essential hypertension because sometimes this was accompanied by arythmia. There was never a murmur or an enlargement; the electrocardiographic examination never showed anything abnormal; cardiologists dismissed her as normal; nor were the kidneys involved. Theoretically hypertension, even when high, is no misfortune if the patient is adapted to it, as they sometimes are for long periods. But this particular woman suffered badly, and in many ways, when her pressure went up. She had to see her physician and improvement occurred forthwith in all her subjective symptoms and in her one objective symptom. Of course, the trust in him also made her adhere to his orders as to diet and other living rules. However, this obedience ran out after some time and rebellion ensued—and with it extreme sickness. This happened at regular intervals for a score of years. Her family were instructed to spare her any events that might have affected her equanimity, as frequently any passion or change in temper brings on a rise of the pressure.

Headache and dizziness are some of the symptoms of hypertension. But they need no chronic illness to manifest themselves. They may be the results of any health impairment or even of a quarrel or other mental commotion. Fatigue is also one of the complaints met with in many acute and chronic diseases or it may simply be a result of overwork. Mental fatigue is usually accompanied by physical exhaustion and vice-versa.

The pallor or redness produced by anger, the syncope or fainting when one is seized by some strong emotion, the perspiration or socalled "cold sweat" following a great scare, the vasoconstrictor or vasodilator mechanism, are an immediate, lightninglike exchange between the soma and the psyche. It is because of this intercommunication that a therapy directed solely at the circulation within the vessels at the heart or kidneys is either imperfect or unsuccessful.

Sleep partakes both of the body and the mind or rather both of them need it and benefit from it. Insomnia may be due to a physical infirmity, to pain, or to a distortion of the mind, to mental suffering, worry, fear—or to mental and physical distress together. Mere loss of confidence in oneself, whether founded on true facts or imaginary beliefs, the disappearance of one's buoyancy, make havoc in a person's mind and destroy at the same time the enjoyment of sleep. Nor do we need to guess why a person receiving bad tidings loses his appetite too and, as a result of that his weight as well, even without other illnesses. This is a direct psychosomatic situation. It may even occur immediately, while one goes to the table hungry. The acute desire for food is suddenly shattered by a telegram relating sad incidents. Facial acne may be a cause or a concomitant cause or a contributory factor of an unhappy depressive state.

A medical man, with an extensive chronic eruption of psoriasis of the arms, hands and fingers, committed suicide because he could not bear his appearance. There is, of course, a partial or total somatic cause to such mental states, but in true neurotic, psychoneurotic, hysteric or manic depressive cases the condition may be entirely mental or psychic, although the complaint may be physical. The physician, however, is often puzzled and misled for some time before discovering the truth. A woman of a rare corporal beauty, aged twenty-five, who before her marriage, earned a living as a model in a fashionable tailoring firm, complained of menstrual irregularities, abdominal pains, a gradual "shrinking" of her eyes and she found her face objectionable and her entire figure intolerable. There were other ideas of self-depreciation, apparently all based on what she called the faulty shape of her body. She implored the doctor to correct her defects. A little later she added that she was extremely and ridiculously tall and that she was alarmed because she was still growing. She was unalterably convinced that since her last consultation, two months previously, she had added three

inches to her stature. Moreover, she avoided going out and stayed at home, preferring the sitting position, so that people would not notice her height, which was really not above 5 ft. 6 inches. The reason for her self-belittling attitude relating to her body was easy to find as soon as the story of her married life and separation from her husband was unfolded. Only then did she disclose her refusal to cohabitate with her husband because of her pain during the act and an examination led to a diagnosis of a disease of one ovary, and an oöphorectomy. This brought a cure both to the soma and to the psyche, because she was finally able to return to her mate and to calm down mentally.

The example I am about to present now seems so incredible that I have hesitated for years to publish it. It would show the great part played by the mind in such a prosaic disease as pemphigus foliaceus. Those specializing in skin troubles are aware that this is an infrequent but vicious illness, dreaded because of its great mortality. I am acquainted with the spectacular cure of several absolutely confirmed cases by a physician who was admittedly not a dermatologist. It is true that he eliminated all the previous treatments—which measure may have been a help by itself—and introduced a simplified, unorthodox method that will be described elsewhere, but this seems to be fantastic and undoubtedly an unsatisfactory explanation of a healing in such a fatal condition. My theory is that his influence tended to impress the patients strongly and to simultaneously make them obey implicitly the therapy which was ordered. Indeed, one of them, twenty-five years or so after her cure, is now saving the lives of other patients by donating her blood—apparently a newly devised and, I am told by a specialist, successful treatment. How much of this incredible but true accomplishment in such an absolutely somatic disease is psychic, cannot be measured and remains a mystery.

We all know that autonomic, vegetative life and the hormonal functions through the endocrine chain are indissolubly related to the deeper feelings that are at the foundation of our thoughts and mental functions. Exactly what the paths are which these threads follow, no one can tell as yet. While we understand that any physical pain soon produces mental worry, we do not appreciate or concede so easily the contrary, that great mental annoyance, torment and anxiety can engender actual somatic pain. No one can overemphasize the relationship between temperament, behavior, moods on the one hand and the pathological condition of the thyroid gland and its well-known visible symptoms on the other hand. Anxiety neurosis and other mental states are frequently associated with hyper- or hypothyroidism. Conversion hysteria is nothing but a reflection of an unpleasant mental state or situation into a more acceptable, make-believe, but often quite torturing physical ailment. It is a projection of the patient's thoughts into a mirror, an abnormal one, which hideously distorts his or her ideas. It would be a mistake, however, to just scold patients of this kind or tell them that there is nothing the matter with them. They too have a right to demand a cure, whatever their ailment is called.

Hysterics

In regard to hysterics we should keep in mind the aura which may also occur in epileptics. It is, as we know, a peculiar sensation preceding a seizure, a "choking" or "globe", chiefly in the throat, perhaps accompanied by a noise in the ears or an unusual feeling in the stomach as well. Whenever insecurity is present, it begins by being preferably referred to the throat. The explanation is, of course, the fact that that portion is the place where life—air, food, water—enters the body. The fear of death may be identified with choking or asphyxiation. This would be the interpretation of what occurs mentally. But what real, somatic basis, if any, there is to this so common symptom in such cases, remains to be seen.

While the more prevalent form of epilepsy is, as a rule not a mental disease, it sometimes shows signs of mental damage or it develops an epileptic personality. We can say that in those cases the psyche and the soma are closely interlocked.

The epileptic seizures, whether we know it or not, are probably of organic origin even when a brain lesion cannot be demonstrated. At least they strongly impress us as such. But they may cover up some deep mental difficulties. A man who had been discharged from military service during the war because of a few real *grand mal*—not hysteric—attacks and more frequent brief, sometimes hardly noticeable (to himself also) *petit mal* or epileptoid spells, complained, in addition to that, of lack of coordination in fine movements and inability to perform the work of precision in his trade. (Romberg's sign was positive without any other symptom attributable to the central nervous system.) The condition continued in civilian life. The patient was reluctant to speak about his association with his wife and only much later it was discovered that she did not love him, that she had induced him to enlist, that she lived in a distant city and encouraged him ("for his own good") to stay away from her. However, as soon as she agreed, at a great moral sacrifice, to reunite with him, both forms of the seizures started to come at rarer intervals and after a while, all but disappeared.

Although in my youth I served in the Army, it was in peace time and I never had any direct combat experience. The nearest I have come to that was to work during World War I for the U.S. War Department as a medical writer and in World War II as a psychiatric examiner both at the induction and the rehabilitation centers. I may not therefore be entitled to give a war episode as an instance. The following has often been cited and it concerns the contrast between the optimistic and the pessimistic patient, otherwise both physically equally healthy and who have undergone a similar amputation performed after a battle. One will, whether intelligently or not, see the pleasant side of his condition—hero, medal, honored at home,

etc.—and, therefore eat heartily and sleep well, laugh and joke and finally form a good stump and recover. While the other, correctly or incorrectly, will look at the seamy side, which, of course, will seem bad and he will feel dejected and unhappy—a cripple, no hope for love, work, or independence, etc. He will suffer from insomnia and lack of appetite, will not withstand complications, will develop infection and die.

In this connection it is worth remarking that we often see superior individuals overcoming somatic hindrances by great psychic force and energy. An example was that of our late President, who never allowed his crippling paralysis to interfere with his historic rôle. Such persons always vanquish frustrations by sheer willpower. Whether we are or are not on their side politically or otherwise we cannot help admiring them.

On the other hand, dissatisfaction with oneself, a deep feeling of inferiority—or, for that matter, an over-compensated sense of superiority—of organic origin, colors all the faculties of some individuals to such an extent that they can never free themselves from their doom. Naturally this stands out more in prominent persons. That is why chronically sick geniuses are prone to bring forth morbid or pessimistic or otherwise unwholesome, if splendid, *chefs d'oeuvre*. Fortunately, this is not always the case because other factors intervene. To give but a few examples: Leopardi, one of the greatest poets of the last century, crushed by external deformities and an inexorable internal trouble, wrote exquisite verse, but poisoned with somber, intense despair and full of bitterness; Toulouse-Lautrec, on the contrary, with the same afflictions and the same sickly physique, amused his contemporaries with his cartoons, posters and pictures; Dostoievsky, a *grand-mal* epileptic, mixed much mysticism in his minute psychological dissections and fine character analyses. If El Greco, in his passionate fervor, enjoyed to paint eccentric, elongated saints, it was due to an error of refraction, some ophthalmolgists claim.

The more typical psychopaths have been classified according to their corresponding somatic constitutions. The schizophrenics, in general, are not only slim, underweight or asthenic, but they are also apparently inclined to be victims of tuberculosis. Curiously enough, the same patients, in certain phases of their mental disease, show a tendency to overeat tremendously, to "gorge themselves" with food, as they describe it, probably to subconsciously distract their attention from various disagreeable problems. This, as you will readily see, is also a translation of a mental state into a physical function or rather dysfunction.

Again the gastrointestinal tract and less often the genitourinary system may be functionally upset in this as well as in other mental disorders.

Psychoneurosis

All cases of neurosis present physical complaints of one sort or another, although their real organic nature seems to be absent or cannot be demonstrated. This is, indeed, what characterizes such conditions and it is still more accentuated in psychoneurosis, which is a disease caused by a feeling of greater or lesser insecurity. These patients convert their insecure position in society, their economic and social condition into a fear of organic illness. Extreme insecurity is the one which deals with the only possession that really matters: the body, its organs and life as a whole. The psychoneurotic, therefore, either invents or magnifies symptoms referred to the heart, the lungs, the kidneys, the genitals, the digestive, assimilative and eliminative systems. In the first stages he may not yet regard these organs as ill, but he may become more aware of them than the average, adequate, person. Although such conditions appear to be psychic only, they cannot be divorced from their somatic aspects.

Alcoholism is certainly a somatic intoxication. No one will dispute the fact that, while it transforms or ruins organic tissue, it also has a large share in degenerating and disintegrating the mind. But reciprocally, alcoholism, this body destroyer, is itself an effect of a mental aberration or of a difficult or unbearable situation for the mind.

I know some of these considerations are not new. Perhaps it seems that what I have done is, as the French would say, *enfoncer des portes ouvertes,* but in order to complete the picture as much as it is possible within a short time, it is necessary to remind ourselves even of the things that we know well.

And there are other toxic materials, often employed in industry, which have deleterious effects not only upon the body, but upon the mind as well. They are originally chemotoxins producing organic changes, but here too the intimate relationship between the soma and the psyche causes them to affect the thinking process.

I do not like the words "nervous" and "nervousness", because they are vague and mostly meaningless and misleading, but we all use them in a loose way. The layman employs them constantly and when he says "it's the nerves" he covers up all sorts of conditions—from a slight excitement or fear to a temper, from a hysteric attack to insanity. However, behind such expressions there is a truth and also a willy-nilly recognition of an inseparable connection between the body and the mind. The "nerves" in this sense are not just some strings or fibers through which sensory and motor impulses and reflexes flow or pass. They are not just roads through the central nervous system. They represent the body so completely blended with the body's total mind that their function is one and inextricable.

It is comprehensible that organic diseases like syphilis, encephalitis and cerebral arteriosclerosis may result in mental disturbance after they have modified the brain tissue as such. But it is not so clear why a sickness of the mind often disappears and readjustment takes place following a hysterectomy. This can only mean that a uterine fibroid tumor may have been instrumental in causing mental disorder.

It seems to me that no one should doubt that, although sexual intercourse, as its name implies, is a

relationship between bodies and organs, the function as a whole is mental. Indeed, copulation is often impossible in a man and a woman who hate each other, or temporarily unsuccessful under various discouraging circumstances. Impotence, while it may also have some anatomical or other somatic roots, is mostly caused, especially in its worst forms, by a mental or situational state.

The very difference between the sexes are due to a fundamental relationship between the soma and the psyche in each individual. The philosopher who saw the future child in the meeting glances of a young man and a young woman was right. The sexual glands, together with the entire structure of the body, are normally in perfect unison with the male and the female mentality, personality and their respective tendencies. Any deviation from the underlying anatomical arrangement results in a change in the individuality and its characteristic qualities. The equilibrium in this respect is extremely sensitive. The smallest physical irregularity causes a more or less evident functional modification or a thorough transformation of the person's character or behavior, reflected not only in sexual life, but in the approach to people and the world. It is likely that congenital homosexualism is not just a consequence of a fine histological digression from the normal within the gonads, but also, starting from the earliest embryological periods, a sequel of a general endocrine abnormality. Later, of course, this wrong or unusual beginning must take the shape of a coarse metamorphosis in the false direction—distribution of hair, voice, form of bones, body outline, etc. The mind, adjusting itself to these particular variations, must follow suit. Outlook, conduct, reaction, themselves products of the homosexual habitus, influence the gestures and mannerisms and so enhance the original tendencies. As always in nature; small causes, big effects.

Sex sublimation, the transformation of sexual necessities into other energies, the outlet of erotic needs into other channels and activities, with or without a decrease of the interest in physical love, may attain lofty degrees in the cultural life of an individual. No matter what its outcome or its height, it is intellectual and, of course, mental. But it is based on a somatic function.

Moods are fickle and irregular during the menses of many women, and the menses may be altered by the woman's state of mind. So is frequently the mental state modified in pregnancy. I need not insist on the interdependence between the menopause and the personality changes and sometimes unbalance of the woman of fifty. So much has been written and spoken about it that a good many doctors and laymen have been frightened. The menopausal phenomena are, of course, apt to be unpleasant and sometimes combined with much suffering, but more frequently they are bearable and would be endured even better without the suggestion of danger surrounding all women. Involutional psychosis occurs from time to time, but more seldom than most people believe. Almost any ailment of the body or the mind that happens to coincide with that period in a woman's life is sometimes attributed to the climacteric by the lazy diagnostician. However, the very fact that hormonal aid and substitutive treatment has a favorable effect on the mental cases of many such women is another powerful argument for the inseparability between soma and psyche.

The coming to the fore of the electric and other shock therapy for some of our purely mental cases is even more dramatically convincing, since the immediate effect is somatic only. Add to this the diagnostic aid in the study—so far of only a few—mental conditions furnished by the electroencephalographic examinations and you may envision for the future greater results in the knowledge of the psychosomatic relationships.

Hypnosis

Hypnosis is a somewhat antiquated method of treating mental abnormalities by suggestion. It had become largely obsolete, but within the last few years it has regained the attention of some psychiatrists. I believe that its effects, even where results are achieved, are too temporary to be of any value. But whatever use it is put to, it can work only because of its influence both on the body and the mind. The suggestion is mental but it influences various functions.

The imaginary pain or itch at the extreme end of the nonexistent amputated leg is a tragi-comical imprint made upon the mind by years or a lifetime of actual physical sensations in that particular portion or perhaps a reflected feeling from other regions.

The author is not as convinced as some other psychiatrists of the fact that definite and advanced organic cases are actually and almost directly caused by abnormal mental states or complicated difficult problems only. I have known women whose persisting pruritis vulvae was due to need of sexual gratification which was lacking and the sudden and permanent cure of which, after resisting all treatments stubbornly, came as soon as a partner was found. I have seen patients with asthma and other physical troubles deteriorate as a result of an added mental traumia and new maladjustment. Colitis sometimes gives one the impression that it originates from an unfortunate situation, but even then a concomitant physical reason can be discovered by the keen observer. Obstinate diarrhea may coincide with untoward events in the life of the patient. There is no question that an ulcer of the digestive tube can be accelerated by perplexing or critical circumstances. Its healing can be quickened by the disappearance of the mental impediments. In other words, we might be correct in calling some of our diseases "psychocardiac", "psychointestinal", "psychogastric" and so forth. To my mind, that something like a real duodenal ulcer should be, as contended by several mental specialists, completely a product of worry, of hard-to-solve problems only, or of other similar disturbances, is not proved except by skillful and unconvincing dialectic reasoning.

Summary

There is no question that in our philosophy of medicine and in all our dealings with the sick, we must never lose track of the interrelationship between soma and psyche. A broad perspective, a high vision is necessary to view the patient as a whole. *"Nur ein guter Mensch kann ein guter Arzt sein"*, said one of my teachers almost fifty years ago. Only an intelligent, understanding person can be a good doctor, we should say today—and that is why it is difficult to point out who is and who is not.

65 WEST NINETY-FIFTH STREET

ELECTROCARDIOGRAPHIC CHANGES FOLLOWING TONSILLITIS

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There are but very few cases recorded in literature, in which myocardial damages, evidenced by electrocardiographic changes, developed following an acute follicular tonsillitis. In the few cases recorded in the literature, only slight, insignificant and transitory changes were noted following either acute tonsillitis or peritonsillar abcess. There are no case reports known to us in which pronounced serious electrocardiographic changes developed similar in magnitude or in caleidoscopic nature to the case presented here. The case herein described is unique in more than one respect and should therefore deserve consideration.

Case Report

H.C.T., male, colored, aged fifty-five, when first seen on the 29th of December, 1943, presented the signs and symptoms of an acute follicular tonsillitis in its incipient stage. Within a few days the clinical picture fully developed. This included chilly sensations, sore throat, dysphagia, fever and general malaise.

Family history, except for the fact that the patient's father died of a paralytic stroke, was irrelevant. The past history disclosed an arterial hypertension which was known to the patient for the past ten years. To his knowledge the systolic pressure averaged around 200, and the diastolic read around 115 mm. Hg. pressure. He had suffered from acute follicular tonsillitis, with an occasional peritonsillar abscess formation, several times during the past twenty-five years, but otherwise had not been seriously ill or handicapped in the performance of his daily work as a tailor.

Physical examination confirmed the presence of arterial hypertension, with a bloodpressure reading of 160 over 105. There was an acute tonsillitis present which, however, remained restricted mostly to the left side: dense follicular patches covering the affected area. There was also a slight bulging, suggestive of a threatening quinsy, which however never developed. The general feeling was not greatly affected, and the systemic reaction was not at all too severe. The temperature was 100.4°F., and the pulse rate 100. Occasional intermittency was attributed to premature ventricular contractions. The electrocardiogram was largely negative (Fig. 1). A mild, first-degree atrioventricular block, a moderate prolongation of the P-R interval, with some other mild changes were considered indicative of an arteriosclerotic hypertensive heart disease. X ray of the heart showed a very marked left ventricular enlargement and a widened and tortuous ascending aorta with a marked aortic knob. Physical examination otherwise proved to be negative, including a Wasserman reaction.

The patient, on bed-rest, reacted favorably to sulfadiazine medication. Recovery was prompt, leaving only moderate redness and slight swelling of the left tonsillary area, which, in fact, did not completely recede even during the next two weeks; when a severe relapse set in. The inflammation again involved mostly the left side of the fauces. At this time, however, the acute follicular tonsillitis was accompanied by the development of a powerful glandular swelling. Enormous enlargement of the sublingual and submaxillary glands developed symmetrically over both sides and caused a tremendous disfiguration of the head. The submaxillary glandular swelling on each side reached fist-size. There was hardly any pain felt, or elicited on pressure or on manipulation. The skin was tightly attached to the smooth, indurated masses, not painful to touch or pressure. In contrast to this most alarming appearance the general condition remained largely unaffected. Deglutition was but slightly interfered with. The temperature hovered around 100°F. The pulse remained good in quality, at a rate of 90 per minute. The blood examination revealed red blood cells 4,750,000 with 80 percent hemoglobin (Sahli) and a color-index of 0.84. The white blood count was 9,300 with 88 percent polynuclear cells.

At this time in addition to sulfadiazine medication, bismuth in suppository was administered (Analbis, each suppository containing bismuth salt (0.135 gm.) of heptadienecarboxylic acid). Prompt recovery followed and within seven days the Mikulicz syndrome disappeared completely.

Simultaneously with the prompt recovery from tonsillitis and the Mikulicz syndrome, paradoxically, the general health deteriorated (January 22). The patient became unusually weak. The temperature dropped to 96.8°F. The tongue became dry and coated, the pulse very small, weak, irregular and hardly perceptible; 78 per minute. The bloodpressure, hardly ascertainable, read 88 over 70. Prostration, anorexia, general weakness developed and the patient collapsed in his bathroom. Amidst signs of an acutely developed circulatory failure, the electrocardiogram at this time revealed auricular fibrilla-

tion (Fig. 2). Significant T wave changes developed. T-1 and T-2 became isoelectric, T-4 deeply inverted, and the previous moderately inverted T-3 became reinverted. Accordingly, at a suddenly developed auricular fibrillation prompt T wave depressions and inversions developed. The rate of fibrillation averaged 300-360, at a ventricular rate of 76. The urine contained more than heavy traces of albumin.

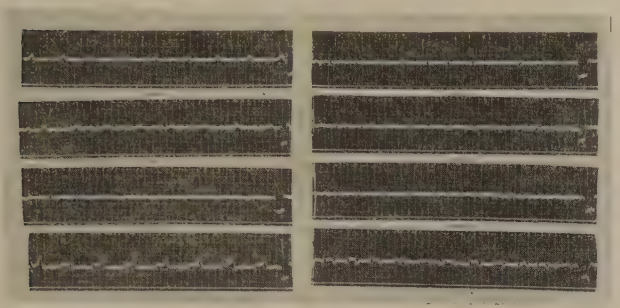

Fig. 1—Electrocardiograph at the beginning of the acute tonsillitis (Jan. 11, 1944).

Fig. 2—Auricular fibrillation. Acute circulatory failure (Jan. 22, 1944).

Strict bedrest, modified Carell diet and digitalization (25 drops of Tincura Digitalis, U.S.P., three times daily) restored the grave condition to a fairly normal state within five days and regular sinus rhythm was reestablished. The entire clinical picture changed instantly. The patient's appetite returned. The tongue cleared up. The bloodpressure increased first to 116 over 66, then shortly to 155 over 105, at a normal pulse rate of 65. Dyspnea on exertion, extreme fatigue, weakness etc. were all gone. The temperature became and remained normal. The throat was still somewhat red, slightly edematous and swollen over the left side. The latter condition kept on for a protracted period. Sulfathiazole in chewing gum, administered in repeated doses, failed to produce any marked improvement. Digitalis was discontinued (January 27).

Paradoxically, at this stage of recuperation, while the general condition improved greatly, further and complete arrhythmia developed. The electrocardiogram now revealed an irregular partial A-V block with Wenckebach phenomenon (Fig. 3). The P-R intervals in subsequent cardiac cycles became progressively longer, they increased from 0.28 seconds, the shortest period recorded, to increasingly longer intervals, until a ventricular complex finally dropped altogether. The ventricular beats were dropped at irregular intervals. The degree of the block varied. We found here 6:5, 5:4, 4:3, even 3:2 blocks. The ventricular rate was between 50 and 60, with a rate in the conducted ventricular contractions varying between 30 and 50.

After a P-R interval of 0.92 seconds a nodal escape occurred, as a preventive mechanism. The P waves followed each other in regular rhythmic intervals. The A-V nodal escape appeared a few hundreds of a second earlier, than the QRS complex of a regularly conducted sinus beat would have been expected. The latter fell into a refractory state, having been blocked, after being preceded by the replacement of the nodal escape. Following the nodal escape, the T-P interval, the resting state of the heart, was commensurately prolonged. The P-P-P intervals, containing the dropped beat and the nodal escape were equal with the P-P-P intervals in the segment of the regularly conducted beats. The P waves following the dropped beat were embedded in the downstroke of the QRS complex of the nodal contraction. The QRS of the A-V nodal contraction showed aberrant conduction from the vertricular complexes of the sinus beats in all leads.

Three days later (Jan. 30) the cardiac action became regular. The Wenckebach phenomenon disappeared. There was still an incomplete (first degree) A-V block with a P-R interval measuring 0.28 seconds uniformly in all leads. T-4, however, was deeply inverted and cove-shaped. (Fig. 4).

Following another three days' period, on the 2nd of February T-4 became positive, though low in

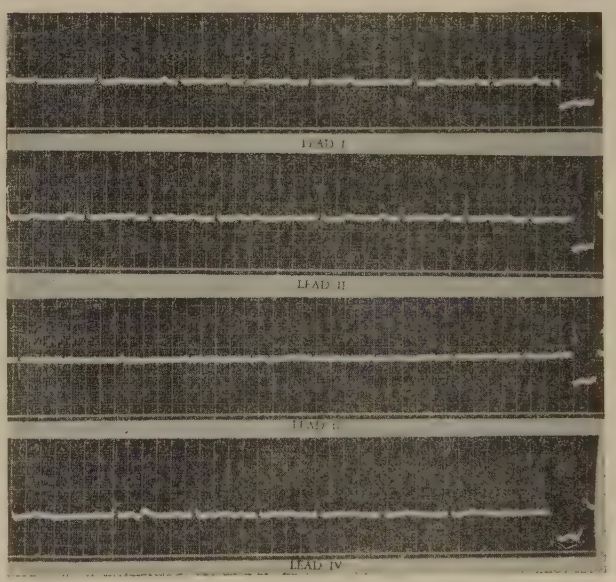

Fig. 3—Incomplete A-V block; Wenckebach phenomenon; (Jan. 27, 1944).

amplitude, in association with a marked U wave. The slightest physical effort, however, reestablished the inversion. Even upon sitting up, T-4 became promptly inverted and cove-shaped, not unlike the pattern seen three days earlier (Fig. 5).

Another three days later (February 5th) the voltage of the positive T-4 increased. It appeared somewhat diphasic, positive-negative. At this time sitting did not affect the direction of the T wave any longer. Moderate exercise, however, did promptly result in inversion. This developed slowly. (Eight minutes after the exercise the inversion was more marked than after four minutes). There were occasional ventricular premature contractions noticeable (Fig. 6).

About two weeks later (February 21st) the premature systoles increased in frequency. Nearly

every second or third beat was premature. (Fig. 7). Exercise at this stage, more strenuous than before, did not abolish the premature beats; it had no effect on them. About a minute and a half later typical bigeminy developed. The bigeminal rhythm kept on unchanged even after ten minutes (Fig. 8). The ectopic beats proved to be right ventricular, concordant, unifocal and fixed coupled bigeminy.

At this stage the patient had practically recovered, except for some tendency to dyspnea on physical effort. Under quinidine administration the premature contractions decreased in number. On the 7th of March, about ten weeks after the onset of the ailment the electrocardiographic findings were similar to the conditions preceding the acute developments. The premature contractions were rare, not more than one or two per minute and the P-R interval was 0.24 second (Fig. 9).

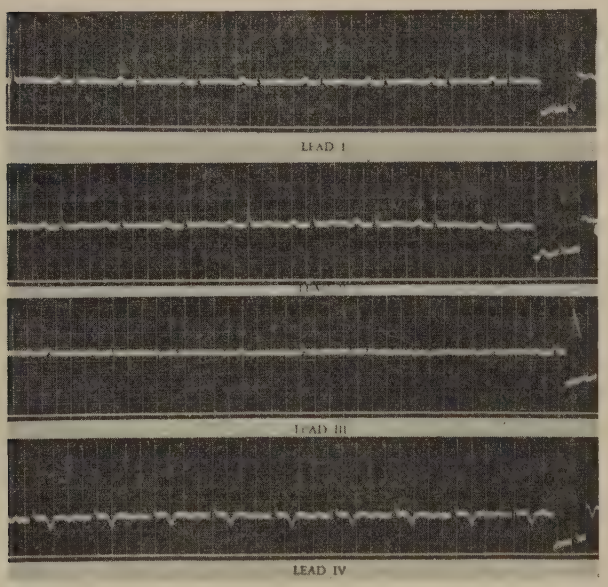

FIG. 4—Sinus rhythm. P-R interval 0.28 sec.; T-4 deeply inverted; (Jan. 30, 1944).

The diagnosis of follicular tonsillitis and its differentiation from diphtheria and Vincent's angina was a clinical one. The distinct and isolated distribution of the necrotic patches, the lack of involvement of the buccal mucosa, the lack of fetor ex ore, the lack of confluent membrane formation, and the age were the prime factors in ruling out the latter conditions. At the same time, tonsillitis, the most common among all these conditions, was the only disease the patient had been repeatedly suffering from in the past. The glandular swelling had increased the difficulties in interpretation of the symptomatology. The enlargement might have been due to processes in the regional lymph glands, or in the salivary glands (Mikulicz syndrome), or to Ludwig's angina.

In angina Ludovici the infection, due to hemolytic streptococcus, involves the connective tissues besides the submaxillary region in the neck and retrosternally. The virulent invasion, often following the rule of gravitation, spreads through the strata of the tissues. The systemic reaction is, as a rule, serious, the prostration marked and the inflamed masses often suppurate. None of these symptoms or signs were present here. In follicular tonsillitis the affected regional lymphglands are located in the submaxillary region, in front of the sternocleidomastoideus. Here the glands are tender, their enlargement is moderate, and due to simultaneous involvement of groups of adjacent glands the swelling is nodular, and the process is restricted to the side of the inflammation. There is no suppuration. No such glandular involvement was present here. In Vincent's angina, as in diphtheria, the lymphglandular involvement is the same as for tonsillitis.

In our case the most probable interpretation, based on the clinical appearance, seemed to be a powerful, uniform and symmetrical enlargement of the sublingual and submaxillary salivary glands, as encountered in Mikulicz syndrome, notwithstanding the fact that both the parotid and the lacrimal glands failed to participate in the process.

The route of infection differs in all three conditions. In tonsillitis the lymphglands become infiltrated through the lymphatic channels. In Ludwig's angina the inflammation spreads to and through the adjacent tissues, per continuitatem. In Mikulicz syndrome the entry for the propagation of the infection occurs through the salivary ducts.

Regarding the prompt disappearance of the tremendous glandular swelling the efficacy of the two drugs administered seemed to have been beyond dispute. Whether or not both or only one of the two drugs was responsible for the curative effect, and in the latter case which of the two carried the brunt, remains unanswered.

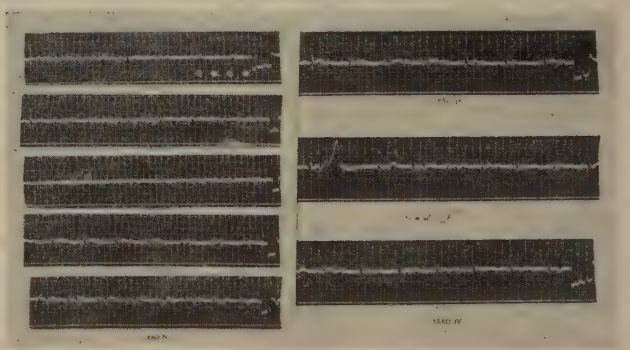

FIG. 5—T-4 positive; on sitting it becomes deeply inverted (Feb. 2, 1944).

FIG. 6—T-4 positive; on exercise, more after eight, than four minutes, it becomes inverted again; sitting does not affect the T-4 any longer (Feb. 5, 1944).

The development of the cardiac failure and auricular fibrillation coincided with the subsidence of the infection. There are no data known to us which would permit the consideration of any damaging effect upon the myocardium as a side-effect of any of the two drugs administered. Streptococcal infections, on the other hand, are well known for their hematogenous invasive properties. Tonsillitis follicularis often proves to be a precursor to hematogenous infections such as rheumatic fever, acute rheumatic polyarthritis, etc. Latter conditions frequently favor myocardial participations. Acute tonsillitis, however, is rarely held responsible for dam-

ages wrought in the myocardial tissues, without the intermediary rôle of acute rheumatic arthritis or some of its equivalents.

Concerning the rôle of streptococcic follicular tonsillitis in regard to systemic reactions M. H. Dawson states that systemic diseases arising as a result of tonsillar infection include in addition to diseases of septic character also "those of a less clearly understood nature in which bacteria cannot be demonstrated in the more remote organs or tissues". Then he continues "the latter group comprises a number of serious diseases among which may be mentioned rheumatic fever, rheumatic arthritis, glomerular nephritis, various forms of nonarticular rheumatism, infectious jaundice, certain types of the erythemas, some cases of asthma and a variety of other conditions. The mechanism involved in the pathogenesis of this group of diseases remains imperfectly understood". It is remarkable that this series while it includes even infectious jaundice and asthma, it fails to mention rheumatic heart disease or myocardial damages, *per se*.

According to C. A. de La Chapelle: "Rheumatic heart disease is one of the manifestations of the rheumatic fever. It is not a complication. It is frequently the first and only structure to be implicated". This author concerning the auricular fibrillation, further states: "this always indicated a severe degree of myocardial damage and invariably leads to cardiac insufficiency".

In rheumatic fever the incidence of myocardial complications is very great. It may exceed sixty percent (Pardee) or it may even reach one hundred percent (Scherf and Boyd). The damages wrought, are smaller, less conspicuous, stealthily developing and only rarely assume dramatic proportions.

In diphtheria serious myocardial damages occur in about five percent of the cases (Edwin H. Place). The most frequent affections refer to T wave changes and to alterations in the A-V conductivity, not unlike in our case.

From the foregoing, in conformity with our daily clinical observations, it becomes evident, that follicular tonsillitis often causes rheumatic arthritis, polyarthritis or rheumatic fever, but it seldom affects the heart without the intermediary rôle of some hematogenous process through the agency of the acute rheumatic fever group. Our case in this respect must be considered exceptional, inasmuch as the myocardial involvement following the tonsillar process must be regarded as having developed without the intermediary rôle of rheumatic fever or of any other demonstrable hematogenous process, because rheumatic fever was not present in our case.

With the subsidence of the auricular fibrillation, when the circus movement gave way to the returning sinus rhythm, a higher degree of A-V block developed, with the Wenckebach phenomenon.

The question arose whether or not these changes with the subsequent ectopic beats, the perpetual bigeminy, were to be considered as sequelae of the streptococcic infection, or rather the results of the digitalis effect. In this connection it well may be mentioned, that the Wenckebach phenomenon developed promptly following the discontinuance of the digitalis, and the ectopic beats and the bigeminy developed days and weeks later, furthermore that throughout these periods no signs of any active streptoccocic infection were clinically demonstrable.

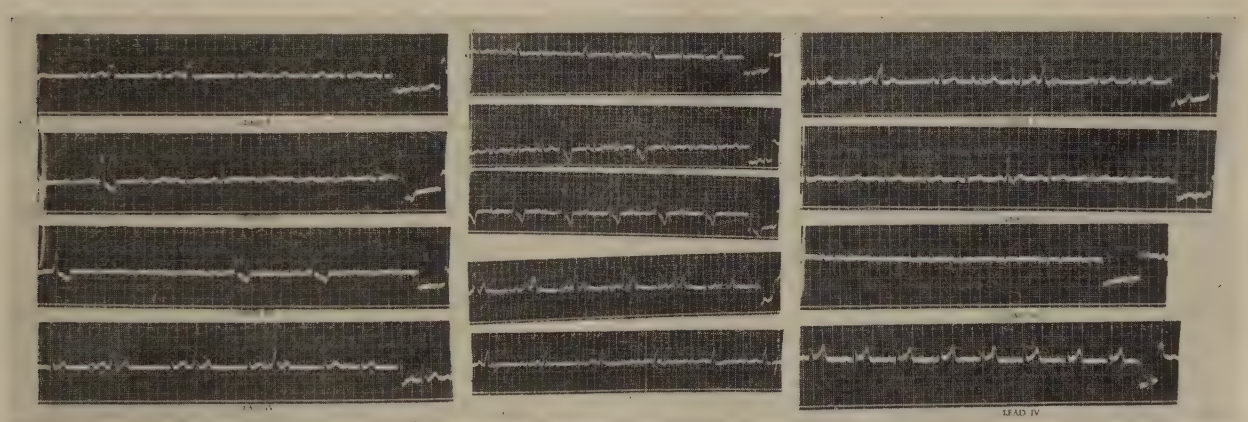

Fig 7—Frequent ventricular premature contractions; electrocradiograph taken during rest (Feb. 21, 1944).

Fig. 8—After exercise the ectopic beats become more frequent, and after 1½ minutes it develops into a bigeminy. They proved to be right ventricular, concordant, unifocal and fixed-coupled beats. First line taken ½ minute after exercise on lead I. Second line 1 minute after exercise on lead II; third line 1½ minutes later on lead III; fourth line shows lead IV, 2 minutes after exercise; fifth line shows the 1st lead 10 minutes later. (Feb. 21, 1944).

Fig. 9—Return to original pattern (March 7, 1944).

It is well known that digitalis may produce electrocardiographic changes of almost any nature, as may any disease or infection. The total amount of digitalis used in our case was small, though this alone can not *per se* be considered as a decisive factor. Socalled digitalis changes on the T waves may be noticeable sometimes after a few hours' digitalization, while in other cases, even an excessive use of the same drug for years, fails to result in any digitalis effect on the electrocardiagraphic pattern.

Digitalis changes on the electrocardiagraphic pattern are usually developing during the time of digitalization and rapidly regress thereafter. In our case the electrocardiogram exhibited progressive changes long after the drug had been discontinued altogether. This circumstance would rule out the rôle of any digitalis effect concerning the changes of this group.

The perpetual bigeminy developed after a physical effort of some moderate exercise employed, contrary to the rule, when increase in cardiac rate (exercise) temporarily abolishes or depresses the extrasystoles.

The auricular fibrillation together with the acute heart failure as a result of the unusual character of the infection, suggested that this specific streptococcus strain, which showed such peculiar affinity and effect upon the myocardial tissue at the onset of the illness, might also have been responsible for the subsequent changes in the myocardium and its electrocardiographic manifestations, both to be considered resulting from the same cause.

The serious prognostic significance of the auricular fibrillation in association with an acutely developing heart failure, followed by a series of serious T wave changes, furthermore the progressive heart-block with typical Wenckebach phenomenon, the perpetual bigeminy etc. are usually considered serious signs of severe structural organic changes in the myocardium. Their caleidoscopic rapid changes and instability, with ultimate disappearance of all the electrocardiagraphic changes and a *restitutio ad integrum*, or at least a restitution to the preexisting, original status are again evidences to the contrary, i.e., that the changes in this unusual case were not expressions of severe organic damages, as one might have righteously expected from the electrocardiographic patterns, because in this latter case they would not have disappeared without resulting in permanent damages, but much rather they must have developed from toxic origin, compatible with the temporary and transitional character of the electrocardiographic changes.

Summary

A case of acute follicular tonsillitis is presented with a series of unusual features:

1. During a relapse Mikulicz syndrome developed.
2. Promptly after the disappearance of the acute tonsillitis and the Mikulicz syndrome acute cardiac failure and auricular fibrillation developed.
3. During the auricular fibrillation the T waves over the limb leads became isoelectric and the T-4 became inverted, and later cove-shaped. The inversion of T-4 disappeared only gradually and slowly.
4. After digitalization the congestive heart failure promptly disappeared and the auricular fibrillation made way for regular sinus rhythm.
5. Subsequently incomplete, second degree A-V block developed with typical Wenckebach phenomenon, the dropped beats being followed by nodal escape.
6. Premature ventricular systoles appeared and developed into perpetual bigeminy. The bigeminy proved to be right ventricular, concordant, unifocal, fixed-coupled beats.
7. Return to normalcy.
8. The electrocardiographic patterns, considered expressions of severe myocardial damages proved to be transitory in character, favorable in prognosis, toxic in origin.
9. This case illustrates the importance of serial electrocardiographic recordings following a follicular tonsillitis. This, in certain cases at any rate, seems to be well justified, lest profound changes, even if of transitory character, would be missed altogether.

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49 EAST EIGHTY-EIGHTH STREET

PROTEINS IN OBSTETRICS AND GYNECOLOGY*

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Good nutrition for an individual implies that he receive and utilize a suitable metabolic mixture of all substances necessary for health. Such a diet must contain protein, fat, carbohydrates, certain minerals and vitamins, and water in optimum amounts.

Research in recent years has shown us the great importance of the rôle that proteins play not only in normal nutrition but also in many diseased states. This has been especially true in the surgical specialties where the significant advances in preoperative and postoperative management demand the administration of adequate protein. To say that the rôle of protein nutrition is any less important in certain medical conditions would be a gross mis-statement. Gynecology and obstetrics is a field which combine to some degree both medicine and surgery and it is soon obvious that protein metabolism is just as important in this field as in the other two.

Proteins are large complex organic molecules, consisting of amino acids linked together. In the pro-

*Presented at a monthly staff meeting of the Hospital of the Protestant Episcopal Church.

cess of digestion they are broken down into their component amino acids which are the only product of proteins which may be absorbed by the alimentary tract. These in turn are rebuilt into body and plasma protein and those in excess are deaminated in the liver with formation for the most part, of carbohydrate. The nonprotein nitrogenous products such as urea are then excreted, mainly in the urine. While there are twenty-two of these amino acids which are known to be nutritionally important, only ten are absolutely essential for normal growth and the maintenance of nitrogen equilibrium. The best sources of these are meat, milk, eggs and whole wheat flour as well as the many by-products of these staple foods. It is still generally accepted that a diet containing one gram of protein per kilogram of body weight per day is the optimum for the normal adult as shown twenty-five years ago by Sherman and his coworkers.

Proteins are the principal nitrogenous constituents of all plant and animal tissues. They are essential elements of both the protoplasm and nucleus of cells and are the main organic components of the muscle and glandular tissues of the body. They are important in the osmotic relations between intracellular and extracellular fluid. Extremely important are some of the specific proteins such as enzymes, hormones and antibodies. In the bloodstream are found some of the most important proteins such as hemoglobin and the plasma proteins, especially the albumin and globulin as well as fibrinogen and the other substances which have to do with coagulation. The plasma proteins are extremely important because of their osmotic influence. They are normally in a concentration of 6.0 to 8.0 grams per 100 cc. of plasma and the normal relationship of albumin to globulin is roughly 2:1. When this ratio is reversed or when the albumin is lowered to less than 3.0 gram percent, edema occurs.

Nutritional deficiencies of one type or another are at the base of a good many problems in medicine. This is especially true of defects in protein metabolism which are so often overlooked by many physicians. The emphasis on and tremendous progress in vitamin therapy has overshadowed this perhaps basically more important problem.

Obstetrics

The importance of adequate protein nutrition in pregnancy has been stressed by Philip Williams who states that 1.5 grams of protein per kilogram of body weight per day is desirable during the prenatal period. The significant work of Winslow Tompkins showing the dearth of obstetrical complications, especially of the toxemias of pregnancy, when a high protein diet is given prenatally is dynamic evidence of the value of proteins. It is not unusual for the plasma proteins to be lowered in the toxemias of pregnancy. This is especially marked in the severe pre-eclampsias, the nephrotic toxemias where large amounts of albumin are lost in the urine and in eclampsia with convulsions. In the severe cases of hyperemesis gravidarum in early pregnancy and in the rather rare case of acute yellow atrophy of the liver a high protein intake is necessary in order to protect the liver.

Gynecology

In gynecology, as in any other surgical specialty, hypoproteinemia may be clinically manifest by: 1. surgical shock; 2. suppression of urine; 3. hemoconcentration; 4. abdominal distention; 5. liver damage; 6. edema; 7. ascites; 8. faulty wound healing and 9. poor resistance to infection.

Of the specific gynecological conditions which are commonly associated with hypoproteinemia:

1. The exudative lesions are of importance. In cases of large tubo-ovarian abscess, pelvic abscess, and pelvic peritonitis due to gonorrhea, criminal abortion, etc., there is a great loss of protein which should be made up.

2. Vaginal bleeding is one of the most common symptoms seen. So often this is a chronic symptom which has been going on for some time. These women very often are anemic, anorexic and have lost weight and strength. Whether the bleeding is due to abortion, fibromyoma, polyp, malignancy, an endocrine dyscrasia or any of the other possible causes, the plasma proteins are commonly below standard and usually cannot be brought to normal by the use of blood transfusions alone.

In the past some of these patients "just didn't do well" when surgical procedures were necessary, even though they were carried out with the greatest of technical skill. There was a tendency toward abdominal distention, nausea and vomiting. Not too infrequently there was a wound separation or infection followed by complete dehiscence of the wound with all its accompanying serious effects. It would be interesting to know what rôle protein deficiency plays in the cases which "go bad" on the operating table or immediately thereafter. How often we hear of such a patient, "she took her anesthetic poorly."

3. Patients with malignant tumors very often have a depletion of their body proteins. These women not only suffer from the symptoms produced by the tumor locally, but also are victims of the anorexia and toxic effect the neoplasm has upon the entire body. The uterus is the most common site of malignancy in the human female and most of these are found in the cervix. There is usually chronic vaginal bleeding besides the other effects mentioned. Ovarian tumors are not as common but these exact their toll upon the protein economy of the human organism also. This is especially evident in the case of the solid carcinoma where there is a large amount of ascites containing considerable protein. Then too, the case with the huge pseudomucinous or serous cystodenocarcinoma containing much protein-laden transudate and exudate, needs extra protein.

A high protein intake is especially in order for those individuals who are treated with large doses of radium or x rays. This method of therapy is commonly used in gynecology in patients already rundown because of anemia and the toxicity of

their cancer; to this is added the anorexic effect and gastrointestinal disturbances rather frequently seen when radiation therapy is given. These patients need extra proteins in order to promote optimal healing and to bolster their general constitutional well-being.

4. Another group, not too infrequently seen in gynecological practice, is exemplified by the young woman who is thin and pale and who complains of severe dysmenorrhea and occasional menstrual irregularity. She usually works in an office in town, and upon questioning, her diet is found to consist of fruit juice and a cup of coffee for breakfast, a tomato and lettuce or jelly sandwich and coca-cola for lunch; and a dainty dinner which has been preceeded by the consumption of several gaudily colored cocktails. Some of these individuals can be cured of their gynecological difficulties by the institution of a well balanced diet and adequate protein intake.

From the practical point of view, correction of hypoproteinemia is not too difficult once the condition is recognized. To be sure therapy is not always as simple as it is in correcting water and electrolyte dehydration because protein is not as simple a substance as water and minerals. Replacement therapy with protein itself or its amino acid components is the only means we have at present of correcting hypoproteinemia. The return to normal of body proteins after depletion is not a very rapid process even when every effort is put forth toward that end. This may be accomplished by any one of four ways: 1. By the oral route with dietary (whole) protein. 2. By the oral route with amino acids or hydrolysate protein. 3. Parenterally with whole plasma, blood transfusions, blood albumin, serum or gelatin, and by 4. Parenteral injection of amino acids.

Oral Treatment

Dietary whole protein: — The ingestion of a high protein diet including the foods previously mentioned, which contain large amounts of the essential amino acids, is obviously the simplest and a very important means of correcting protein deficiency. Ordinarily 150 grams of protein per day is said to be the upper limit of intake for the average sized adult in this part of the world. At best this is a slow means of raising plasma protein and is not suitable for the severe case. However, it is the most valuable therapy for the ordinary prenatal patient and the common type of toxemia of pregnancy. It is necessary in the building up of patients for surgery who have had chronic hemorrhage or poor nutrition. In cases of malignancy it is important to continue this therapy after operation, especially after radium or during x ray radiation. It is an invaluable means of protecting the liver against injury to which that organ is continually exposed during long surgical procedures under the various types of anesthetics.

Use of amino acids and hydrolysates: — In many surgical cases as well as in eclampsia only a limited amount of protein can be taken by mouth. In the severe cases of hypoproteinemia even a high protein diet does not suffice. It is in these cases that supplementary amino acids may be given by mouth or if necessary by nasal or enterostomy tube. There are several of these products now on the market, many of them have a rather low protein content and some of the newer yeast hydrolysates do not have all the necessary amino acids.

Among the more popular at present is Aminoids, a powder which contains 45 percent aminoacids and proteins.

There is a product called Amigen, which is put up in powder form and contains ninety percent total protein and over sixty-five percent amino acids. It contains all the essential amino acids in a significant amount. One tablespoonful of Amigen contains eight grams of Amigen protein. It therefore would take approximately twenty tablespoonfuls per day to insure a very high protein diet. Most of these products are rather unpleasant to take and should be made up in ten percent or twenty percent solution or thirty percent suspension with grapefruit, lemon juice or milk. Some prefer a more concentrated plain mixture followed by a "chaser."

Parenteral Treatment

Since serum albumin is not widely available and gelatin contains only a few of the essential amino acids, these will not be considered here.

Plasma transfusions as we know are of great importance in acute shock or in cases of peritonitis where plasma proteins *per se* are needed; however, they are of limited value in the more chronic deficiencies or in cases which need continual parenteral protein nutrition. The disadvantages are: 1. The inconvenience and expense inasmuch as one liter of plasma contains but about 60 gms. of protein which requires four donors and processing. 2. Plasma protein-albumin and globulin must be metabolized into smaller units before the protein can be utilized by the other tissues of the body. 3. Plasma protein is not a complete protein inasmuch as it lacks sufficient amounts of a few of the essential amino acids.

The use of amino acids is really the only simple and practical method of correcting protein deficiencies by the intravenous route. In eclampsia, surgical cases, or other cases where parenteral administration is necessary they are of the greatest value. Almost every pharmaceutical house is working on this problem at the present time but there are only two such products on the market:—1. Parenamine which is a sterile fifteen percent solution of all the essential amino acids. It is a product of acid-hydrolysis which destroys tryptophane, but this is added in adequate amount. 2. Amigen solution, which is put out in five percent and ten percent solutions of the essential amino acids in a like amount of dextrose. This is a product of enzymatic hydrolysis.

These solutions are best given in 5 percent strength, a liter at a time. The rate of administration should be from 40 to 160 drops per minute and is usually given intravenously although it has been given subcutaneously. The overt reactions to such therapy are: 1. Nausea and vomiting from too rapid

injection. 2. Flushing and sense of warmth. 3. Occasional abdominal pain. 4. Occasional low grade fever. 5. Phlebitis and thrombosis of the vein used for injection.

Another danger which should be mentioned is that these solutions are excellent culture media for microorganisms, even better than the traditional agar-agar, so that the greatest care in maintaining aseptic technique while making the solutions and administering them should be followed.

These solutions have proven to be of definite value in the gynecological and obstetrical conditions mentioned. It is therefore imperative for us not only to recognize but also to regulate protein deficiencies as soon as we come in contact with them and certainly before we employ any major operative procedure whether it be in gynecology or obstetrics.

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DICUMAROL THERAPY*

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The recent interest in the use of anticoagulants in medical and surgical conditions prompted this consideration of the problems met in the administration of dicumarol, an effective orally administered anticoagulant (1,2). Since the administration of this drug is not without some danger, a proper understanding of its indications, contraindications and range of dosage is necessary. Under controlled conditions it is an effective and safe procedure (3). This presentation is a review of some of the recent literature and some personal experiences.

The problem of embolism and thrombosis has long been receiving the attention of numerous investigators (4,5,6,7,8). The occurence of such phenomena complicating both medical and surgical conditions has been a challenge to scientific research into its causes and treatment. During recent years many studies have been conducted along these lines and the varying approaches to the problem are an indication that the real answer is not yet at hand. Early exercises while in bed as advocated by Shaw and Rickards, (9) ligation as suggested by Allen, Linton and Donaldson, (10) shortening periods of bed rest recommended by Harrison, (11) and heparinization (12,13,14) have all had its champions. While there is much in favor of all these methods, they present certain obvious disadvantages. The discovery of dicumarol in 1941 by Link (15) and his associates gave impetus to clinical experiments with this readily administered oral preparation. They were able to isolate and then synthesize [3,3' methylene-bis-4-hydroxycoumarin], known as dicumarol (1,2). This substance when given orally produced a significant prothrombin deficiency as measured by the Quick (16,17) test. The relatively simple method of administration and rapid effect on the coagulability of the blood pointed to its field of usefulness. In the five years since its discovery a great deal of clinical and experimental material has accumulated. A recent review by Barker (3) reports the experience of the Mayo Clinic in over one thousand surgical and one hundred medical cases.

Barker (3) cites the indications for its use as follows: 1, Non fatal postoperative, postinfectious or posttraumatic pulmonary embolism, because of the great risk of subsequent venous thrombosis and embolism during the subsequent few days or few weeks. 2, Postoperative, postinfectious or posttraumatic thrombophlebitis because of the danger of extending remote venous thrombosis and therefore a pulmonary embolism both fatal and nonfatal during the subsequent few days or few weeks. 3, After operations on patients who have previously had thrombophlebitis or pulmonary embolism because of the danger of recurrence of these complications. 4, After peripheral arterial embolism because of the danger of further intracardiac thrombosis and of propagating thrombosis from the embolus when the arterial spasm relaxes. 5, After acute peripheral arterial thrombosis from any cause because of the imminent danger of extending arterial thrombosis. 6, In thrombophlebitis or pulmonary embolism complicating blood dyscrasias or congestive heart failure, although its use is limited to the time that it can be used, since in these diseases the thrombosing tendency may be excessively prolonged.

Dicumarol is administered orally. (It produces a definite prothrombin deficiency as measured by the Quick (16,17) prothrombin time test.) The degree of this deficiency depends upon two factors—the dose over a given period and the individual susceptibility to its action. In addition to its effect on the prothrombin time it also prolongs the clot retraction time and causes a rapid sedimentation rate. The coagulation time may be prolonged, but it does not parallel the prothrombin time and therefore can not be used as a therapeutic index. Except for some recent work (18) that suggests an inhibition of platelet adhesiveness there are no other known toxic or physiological effects.

*Read before the Staff of the Atlantic City Hospital, Dec. 26, 1945.

Clinical experience has shown that thrombosis will not develop if the prothrombin time is below 30 percent of normal. Likewise it is shown that bleeding will not occur when the level of prothrombin is maintained at above ten percent of normal. In order to achieve the therapeutic result a level somewhere between these figures must be maintained. The Quick prothrombin test must be done daily and the dose of the drug adjusted accordingly. It must be borne in mind that sensitivity to the drug may develop and that there may also be a delayed or prolonged action of the drug. Because of these properties the level must be watched closely. 300 mg. of dicumarol is given orally in a single dose after the prothrombin time has been established. 200 mg. is given each day that the prothrombin time is above twenty percent of normal. No dicumarol is given on days when the level is below 20 percent of normal. In patients who are very sensitive to the drug, a very rapid drop to the twenty percent or below may be noted and it is then best to reduce the daily dose to 100 mg. In rare instances when the patient is resistant to the drug, it may be necessary to give 300 mg. daily until a satisfactory drop is noted.

Prophylactically, to inhibit postoperative thrombosis, dicumarol therapy is started on the third postoperative day. The prothrombin deficiency must be maintained until the patient has been ambulant for at least four days. In nonsurgical cases the deficiency must also be maintained until about four days after the patient has been allowed up and around. Daily prothrombin time must be taken until there is a definite and continued rise towards normal in order that appropriate measures may be taken to restore a normal level, if it should not rise on its own accord.

The proper administration of the drug is accompanied by no serious bleeding. Minor epistaxis, microscopic hematuria, and bleeding from the gums may occur. Recent wounds, ulcerations, and gastrointestinal lesions may produce more serious bleeding. If the prothrombin time does not fall below ten percent of normal, there need be no fear of significant bleeding. Bleeding has occured in no more than four percent of cases where the prothrombin time fell below ten percent of normal (2,3). When there is a rapid drop to below ten percent of normal a safe level can be restored in ninety percent of cases by the intravenous administration of 64 mg. of menadione bisulfite (19). Extreme caution should be used in subsequent attempts to affect the prothrombin time. 100 mg. or 50 mg. doses may then be used. If bleeding should occur 500 cc. of freshly drawn citrated blood should be given in addition to the menadione bisulfite (3). Under such therapy the bleeding will cease in a few hours. When a rapid antithrombotic effect is desired 300 mg. of dicumarol by mouth and 50 mg. of heparin by vein can be administered at the same time. A prothrombin time is done at the end of four hours. Heparin is repeated every four hours, preceded by a prothrombin time, and the dicumarol given daily in 200 mg. doses until the desired level is attained. From that point on the heparin is discontinued and the dicumarol given according to original plan.

Contraindications

Dicumarol should not be administered to patients who have renal or hepatic insufficiency, since such patients already have some degree of hypoprothrombinemia. It is contraindicated in cases with a blood dyscrasia with bleeding tendencies and in all types of purpura as well as in subacute bacterial endocarditis because of the liability to sudden hemorrhages. The consideration of concomitant therapy is important since recent work has shown that salicylates, (20) quinine, (21) digitalis, (22) and the sulfonamides, (23) have a dicumarol-like effect on the prothrombin time. If it is deemed necessary to give dicumarol along with these drugs, extreme caution must be exercised. It must be used with extreme caution in the presence of open wounds, bleeding surfaces, or ulcerative lesions of the gastrointestinal tract. Rapid fall in prothrombin time may take place in cases with dietary and nutritional deficiencies as well as in cases of continuous vomiting or interference with normal drainage from the gastrointestinal tract. It should not be used after surgery of the central nervous system since minor bleeding on such surfaces may have serious and permanent effects.

Case Reports

CASE I.—A. DeV., aged thirty-four, female, suffering from moderate hypertension was delivered of a still born infant in her thirty-third week of pregnancy. Dyspnea, pretibial edema, and albuminuria were present during the latter course of her pregnancy. The postpartum course was uneventful until the eleventh postpartum day when she developed a shaking chill, dyspnea, clammy perspiration, and reddish blue mottled discoloration of the skin. Temperature 104°F, pulse 140, respiration 20. There was severe lower abdominal pain and pain in the left thigh. A similar episode occured six days later. Temperature 102°F, pulse 112, respiration 22. An examination revealed tenderness in both lower quadrants, and a thick tender left femoral vein. White blood cells 20,900, polymorphonuclears 93 percent, lymphocytes 6 percent, monocytes 1 percent, 47 filament, 46 non-filament. A diagnosis of thrombophlebitis of the broad ligament with extension to the left femoral vein was made. In view of the fact that she was already seventeen days postpartum, and that this was a second episode, it was decided to use dicumarol. The urine at this time was free from albumin and casts, and a normal fluid balance was present. The condition of the kidneys did not then contraindicate the use of dicumarol. A course of penicillin was given for about four days until the temperature came down to below 100°F.

The initial prothrombin time was 92 percent of normal. 300 mg. of dicumarol was given orally for the first dose, then 200 mg. daily until a prothrombin time of 14 percent of normal was reached on the sixth day. For six additional days the prothrombin time dropped daily until it reached 9 per-

cent of normal. No dicumarol was given during this period. It then rose gradually to 23 percent of normal over a period of five days. A dose of 200 mg. of dicumarol was given on two successive days when the level was between 20 and 30, and the prothrombin time dropped to 17 percent of normal. No more dicumarol was given. At this time bleeding from the gums and gross hematuria appeared. The bleeding from the gums ceased after about four days, but the hematuria persisted for about a week and then diminished until after about two weeks when there was neither gross nor microscopic evidence of blood. In the meanwhile the blood count dropped from 5,200,000 red blood cells and 14.5 gms. hemoglobin at the onset of the illness to 3,120,000 red blood cells and 10 gms. hemoglobin. The anemia was treated with iron; no further dicumarol was given. The prothrombin time gradually rose to 60 percent of normal thirty-eight days after the start of dicumarol therapy. The signs in the lower abdomen disappeared and the thrombophlebitis of the left femoral vein became organized and contracted.

In this case the indication for its use was a recurring embolic phenomenon. She was far enough postpartum to minimize the danger of uterine bleeding. In spite of her mild toxemia reasonably good renal function was present. This case demonstrates the prolonged effect of dicumarol; after reaching 14 percent of normal in six days, the prothrombin time continued to drop without further dicumarol until it reached 9 percent of normal, then gradually rose to 23 percent of normal in five days. The bleeding from the gums and urinary tract subsided spontaneously but not until a significant drop in the blood count occured.

Case II.—G.V., aged forty-three, male, was admitted to the hospital with a history of pain, tenderness, and discoloration just above the left ankle on the inner surface for about three months. No cause could be determined. There was evidence of recent spread of the phlebitis. The blood count on admission to the hospital was 15.5 gm. hemoglobin, 5,290,000 red blood cells and 10,950 white blood cells, 88 percent polymorphoneutrophiles, filament 33, nonfilament 55. The initial prothrombin time was 92 percent of normal. 300 mg. of dicumarol was given orally. 200 mg. was given daily for seven days when the prothrombin time reached 37 percent of normal. The dose was reduced to 100 mg. for one day. The prothrombin time ranged between 20 and 30 percent of normal for about four days without the administration of dicumarol, then dropped to 0 percent of normal five days after the 100 mg. dose; 64 mg. of menadione bisulfite was given intravenously and the prothrombin time promptly rose to 60 percent of normal. A change in nursing personnel took place and 200 mg. of dicumarol was given inadvertently since the original order called for such a dose whenever the level was over 30 percent. Another 64 mg. dose of menadione bisulfite brought the level to 77 percent then 100 percent normal.

The indication for its use in this case was a rapidly spreading phlebitis. The striking effect of intravenous administration of menadione bisulfite is well demonstrated in the two dramatic responses when the prothrombin time fell to 0 percent normal.

Summary

Dicumarol is a valuable addition to the therapeutic measures employed in the control of thromboembolic processes. Although it has an anticoagulant effect by the production of hypoprothrombinemia, it must be recognized that it has no direct effect on the already existing embolism or thrombosis. In no sense of the word does it melt these away. These pathological processes follow their usual course of organization and contraction. The dicumarol is effective in lessening the tendency to further coagulation and extension and breaking off of thrombi to become distant emboli. This is demonstrated in the first case where a well organized and firmly thrombosed femoral vein could be palpated. There are still a number of technical difficulties which preclude its routine administration. Daily venapunctures for prothrombin time are disturbing to the patient, they are expensive, and they require a better than average technical skill for accurate determination. A better and closer understanding of its use, dosage, dangers and means of control are needed before it can be looked on as a routine procedure. Certainly it should only be carried out in a hospital. The treatment can not be written out on the order sheet as a routine order. It is advisable to clearly state how much of and when each dose is to be given; 64 mg. of menadione bisulfite should always be available at the bedside for immediate intravenous administration. Patients receiving dicumarol should be typed and have suitable donors rapidly available.

With a proper understanding of its action, the proper selection of cases and availability of control measures, dicumarol therapy can be a valuable asset by itself or in combination with other measures in the control of embolic and thrombotic complications.

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2807 PACIFIC AVENUE

PHARMACOLOGY AMONG ANCIENT HEBREWS

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The ancient Hebrew physicians had some knowledge of the nature and pharmacological action of certain drugs. Their knowledge of this subject was based mainly on tradition and observation. Thus the famous physician, Rabbi Samuel, who lived in the third century, took internally a certain remedy called "kulcho" for observing its effect (Nedorim, 50b).

There are many records in the Babylonian and Palestinian Talmud which show that the ancient Hebrew healers frequently prescribed various drugs, herbs and minerals in compositions in forms of powders, solutions, and ointments. Their *materia medica* consisted mainly of animal products. The nomenclature of these drugs at that epoch was so different from the modern *materia medica* that it is difficult to determine which drugs of the present pharmacopeia they applied then. Furthermore, the drugs were administered in general form, pharmaceutical preparations were mostly not prepared in proper proportions of weight and measures, and doses were not designated.

Rabbi Haninah was the first famous Hebrew physician in the second century. He was the attending physician to Rabbi Jehudah, the son of Simeon, the prince among Israel. Haninah placed upon his seal a branch of a palm tree as a symbol of true medicine. He advised carshum for relief of pains in the stomach (Ab. Zarah, 29). Other authors of the Talmud recommended wine and oil for intestinal disturbances (Sab., 109b). They prescribed opium (they called it "opiun") as an analgesic and hypnotic agent, and pointed out that large doses of this drug were dangerous (Yer. Ab. Zarah, ii). In cases of overeating or indigestion they administered ipecac (they called it ipetosin) as an emetic (Nedorim, 147a):

Intestinal parasites were expelled by the ancient rabbis (Ber., 36a). Jaundice was treated by an herb called *"coss ikrin"* (Sab., 109b). They used a grain of pepper or cinnamon to take away any bad odor of the breath (ibid, 64b). They advised the use of oil and heat to the body as a prophylactic measure. In major operations the patient was given an anesthetic (B. Kama, 85a). Wine in small amounts was regarded as a remedy; in large amounts, as a poison (B. Batra, 58).

A grain of salt or the eggs of grasshoppers were recommended as remedies for toothache (Ab. Zarah, 28a). Rabbi Juda ben Ezekiel, who lived in the first half of the third century, stated that snails are a remedy for sores; the fly, for the sting of a wasp; the mosquito, for the bite of a serpent; the serpent, for the mange; and the lizard, for the bite of a scorpion; and that the bites of snakes are useful in the therapy of "hafofith", an obscure skin malady. Dr. D. I. Macht remarked that the prehistoric superstitions and myths concerning the medicinal virtues of snake venom had already been investigated by Rabbi Juda's time, was corroborated by Maimonides, rediscovered by Dr. A. Monaelesser and finally established by the experimental investigations of pharmacologists of our day.

The following Talmudic statement is characteristic of ancient times; "As a remedy for heart trouble it is of benefit to apply externally a liniment con-

sisting of cumin, soap, mint (fern), wormwood, cedar blossom and hyssop"; all these were to be dissolved in wine. The same dissolved in beer was useful against pain in uterus. This concoction dissolved in water was beneficial for gas in the stomach (Ab. Zarah, 29a). A. C. Celsus referred to two valuable plasters prescribed by Hebrew physicians. He wrote: "These are both plasters. One for fracture, and should consist of the following ingredients: salt, scales of red copper, calcined copper, ammoniacum, thymiama, soot of frankincense, dry resin, calophonian resin, wax, veal suet, vinegar and oil." This preparation, Celsus calls Judeus' plaster. The other is a composition also by Judeus, formed of two parts of lime and a pound of the reddest nitre, which are mixed with the urine of a young boy, till they be of the consistence of strigment. The parts on which this is spread, must be moistened (Cf. Greives' translation of Celsus, London, pp. 223, 237, 1838).

In the ancient Hebrew literature there are recorded various drugs and herbs used as prophylactic and therapeutic measures. A few of them are given as an illustration of the primitive pharmacology. Some of these medicines are used even in modern times. As a remedy for cough, Rabbi Pappa advised filling a new pitcher with water putting therein a spoonful of honey and a rue (plant). The ancient Rabbis recommended warm goat's milk every morning as a remedy for bronchitis and cardiac pains (B. Kama, 80a). They treated headaches with external application of vinegar (Sab., 111a). The Talmudists advocated certain antidotes against poisons. Rabbi Hunna said: "If one has swallowed a leech or bee, drink some strong vinegar." The Rabbis cured the sting of a lizard with warm medicines; that of a hornet with cold ones. Likewise, warm medicine were recommended for pricks of thorns, and cold ones for chapped skin; to reverse was dangerous (Ab. Zarah, 29a). They used a salve consisting of seven parts fat and one part wax for skin disease, and recognized sulphur and salt baths as a remedial factor (Sab., 133b and 109a). A cold was treated by the ancient Jews with agents inducing perspiration (Gitin, 70a). The Talmudists used a composition of certain herbs as a purgative remedy and advised not to give it to a pregnant woman as it was dangerous (Perochin, 42). In order to stop bleeding Rabbi Samuel applied cress dishes mixed with vinegar. Other Rabbis recommended the application of cold water (Sab., 53). Some Talmudic physicians believed that diseases were curable by those particular drugs or agents which produce similar symptoms or pathological effects on the body. Thus, Rabbi Samuel recommended heat for inflamed parts (Sab., 41a). Other ancient Rabbis stated that the same agent which produce disease is capable of curing the same disease. These statements are in accordance with the principles of homeopathy. The authors of the Talmud had an idea that the bite of a mad dog was fatal but it might be cured by having the patient eat a certain part of the mad dog. Significant is the following Talmudic statement: "One who is bitten by a mad dog ought to eat part of the liver of the same dog" (Yumo, 84a)".

The ancient Hebrew physicians advocated in some cases remedies without rational foundation. They included in their *materia medica* remedial agents of magical doctrines taken from the Persian traditions. The popular medical superstitions which were common then in Asia were also adhered to by the ancient Israelites.

With regard to popular remedies the ancient Jewish physicians frequently used home remedies which were accepted at that time. A great deal of these remedies are of a talismanic or mysterious nature and bear the characteristic stamp of the old oriental nations. It is of interest to note that Maimonides (1135-1204) forbade the use of homemade medicines because the efficacy of these remedies was not proven.

The outline of pharmacology by the ancient Hebrews was the forerunner of the scientific *materia medica*. They are of historical interest showing the evolution of this important branch of medical sciences. The remedial measure other than drugs such as diet and hygienic rules, advocated by the same ancient Jewish doctors, have to a certain extent a scientific value.

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PSYCHOSOMATIC PROBLEMS IN GASTROENTEROLOGY

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Psychosomatic medicine is now practiced in all the specialties, but its main value and importance is in gastroenterology especially in the diagnosis and treatment of gastric and duodenal ulcers, ulcerative colitis and spastic or atonic constipation.

It is well known to every physician that emotions will cause digestive disturbances. Alexander studied the psychological structure and life situation of patients suffering from functional disorders of the gastrointestinal tract, as well as of those who suffered from peptic ulcer and colitis; he came to the conclusion that the gastrointestinal tract, because of its three functions of taking, retaining, and eliminating, was suitable for these three elementary emo-

tional tendencies if their normal expression through the voluntary motor system was inhibited.

Furthermore, Robinson relates, in a thoughtful analysis of one hundred patients with digestive complaints, he found that in 50 percent of them, no organic lesion or unhygienic habits could be discovered to account for the symptoms. In patients with peptic ulcers, Robinson states, most of them might have escaped peptic ulcer if their functional nervousness had been recognized and treated by the physician, instead of eliminating the existing neurosis.

It is a well known fact that motor, secretory and also inflaming changes in the gastric mucous membranes cause epigastric fullness, anorexia and gases. In the intestinal type it is characterized by the irritable colon-complex, chronic recurrent diarrhea, and is usually associated with achlorhydria.

Referring to mucous colitis, White and Cobb regard them as a bodily reaction rather than a disease-entity. They further contest that the mucous colitis is probably more responsible for the unnecessary removal of undiseased appendix than any other cause.

Now let us see what the Mayo Clinic has to report about peptic ulcer. A study of fifteen thousand cases of chronic dyspepsia proved that more than 15 percent had an x ray evidence, pointing to the peptic ulcer as the real cause. The gastroenterologist finds in his daily practice, that peptic ulcer, especially of the duodenum is the most organic lesion within the gastrointestinal tract and it is also responsible for chronic dyspepsia.

We admit that the term "psychosomatic" can be used without hesitation in connection with peptic ulcer, because today there is no doubt that the physician should recognize the importance of the emotional factors, which cause peptic ulcer. I repeat that in gastroenterology, psychosometrics play a main part in the diagnosis and treatment.

How many times is the gastroenterologist puzzled in the diagnosis of gastrointestinal ulcer, when, having in view only the physical and laboratory findings, he forgets to consider the mental complaints of the patients. For example, in ulcerative colitis, a problem which focuses attention on the question of the interrelationship of a psychic and organic disease, it proves that patients in general have emotional factors, which complicate and add to the burden in the physician's diagnosis. I add my great admiration and acknowledgement for the practical move made by the Cornell University Medical College to create a "project" in internal medicine designed to deal, clinically and experimentally, with psychosometrics in those ambulatory and clinic patients who suffer from symptoms related to their emotional states and life situations, with Professor Ripley as chief psychiatrist, who directs the newly established Cornell project.

Another fact worthwhile to recognize are the very successful psychosomatic conferences held in the Temple University Medical College, of Philadelphia under the direction of Professors English and Weiss, with good results. In both of these mentioned clinics the physicians are presenting patients from the general medical wards who have been studied before, psychologically as well as medically, but are still missing the complete diagnosis. We must admit that no psychosomatic medicine could have been attempted without the biologically oriented psychology of the late Professor Sigmund Freud. It is obvious that with the latest developments in research and observations in the hospitals, clinics and laboratories, medicine tends to become, in the near future, purely psychosomatic medicine. When we take into consideration the relationship between psychic factors and ulcer formations today, we see that in ulcerative colitis cases, psychological factors are directly responsible for the disease.

Murray and Sullivan stressed the importance of etiology as a psychogenic factor in ulcerative colitis, and furthermore they considered a psychotherapy treatment of utmost importance. They believe that when the emotional conflict is solved, the intestinal motility returns to normal, the chief irritative factor is removed from the colon, which can then take care of its bacterial invaders and the disease may promptly disappear. Latest studies point to a rôle of hypersecretion of accetylcholine in the intestinal tissues under the influence of emotions.

To prove that peptic ulcer is a psychosomatic disease I can only quote some observations made by Cushing that; a, highly strong individuals are susceptible to nervous indigestion; b, that ulcers become symptomatically better and tend even to heal, when the patients are put mentally and physically to rest; c, that the ulcers are prone to recur as soon as the victim of the disorder resumes his former tasks and responsibilities, and finally, Cushing suggests that highly "vagotonic" persons subjected to emotional stress are prone to have chronic digestive disturbances leading to ulcer. We must agree that ulcers are not the result of a single agent, but are the product of the interaction of various agents and that the constitutional or systemic factors are very essential to consider.

Professor Draper, since long a well known protagonist of diseases in reference to psychosomatic reactions, points the way to still a deeper psychogenic understanding of personality in the relation to peptic ulcers by calling our attention to the unconscious mental life of the patient afflicted with the disease.

What can be interpreted as a direct effect of physiological factors in peptic ulcer are the disturbances in secretion, the changes in motor activity and to a certain extent, the alternation in the blood supply of the stomach.

As to furthering the study of psychosomatic factors in gastrointestinal disease and especially in peptic ulcer, more research work and closer clinical observations will solve the problem of indicating psychosomatic medicine in gastroenterology.

125 RIVERSIDE DRIVE

Editorials

Relative Value of Iodine and Mercurials as Skin Disinfectants

According to the record, Davaine discovered the antiseptic action of iodine in 1873. Since then almost innumerable such agents have been recommended by workers in various fields, particularly in abdominal surgery.

One may as well recognize at the outset that there is no such thing as perfect sterilization of the skin in the bacteriological sense. However, it is possible to make the skin "surgically clean" and thus avoid stitch abscesses or delayed healing.

Working at Mercy Hospital in Charlotte, N. C., T. C. Bost, M.D., made a comparative study of six germicides most commonly used in surgical practice. The investigation was so thoroughly done and so succinctly reported that it should be quoted in detail, but we can do little more here than try to present the highlights. (*No. Car. Med. Jour.* 5:4, *April* 1945).

Bost lists five essentials of any skin germicide: 1. It must kill germs in a reasonably short time; 2. it must not be neutralized by serum, fats, soap or oils; 3. it should continue to be bactericidal, at least, during the time allotted to any abdominal procedure; 4, it must not irritate the skin; 5, it should be colored in order to show the area of application. A sixth essential may be added, namely, cost.

Sufficient stress hitherto has not been placed upon tests *in vitro* and *in vivo*. Rapidity of action and efficiency in a test tube may far excel the practical application to the dermis. After all clinical use is the final test of any procedure. If results are inadequate after the scientific protocols have been set up, not much can be said for any agent.

In this study, twelve hundred tests were made on six hundred patients—all abdominal. In each instance preliminary preparation of the skin was as follows: The skin was scrubbed with green soap and shaved. The soap was then washed off with tap water. The skin was swabbed with ether, and finally with seventy percent alcohol . . . At the operating table, the skin was scrubbed over a wide area with ether, then the antiseptic agent was applied. After iodine, the excess was swabbed off, and another swabbing with alcohol was made to prevent "burning" of the skin. All other test agents were left on as applied.

Two sterile knife blades were used in each test. The first was a scraper, to remove the outer layer of epidermis where germs are said to dwell. This blade was then dropped into a broth culture. The second blade made the incision, but through the skin only. This was also dropped into another tube containing broth. Both tubes were then cultured and the results tabulated.

As a sort of control, an area on the opposite side of the abdomen was scrubbed with green soap until the skin became red. Then the soap was washed off with sterile water. Again two knife blades were used and cultured after the method outlined for antiseptics. Of course, this was a test to prove or disprove that "soap and water are just as good as anything else."

Six germicides of known strength were used in turn in the series of cases, but not all in any one instance. They were: tincture iodine, 3.5 percent; tincture iodine, 7 percent; tincture mercresin; tincture zephiran; tincture merthiolate; and Scott's Solution (surgical mercurochrome, H.W. & D.) Three tables set forth the results obtained. The conclusions are that tincture iodine, 3.5 percent was about three times as efficient as the next best agents,—tincture iodine U.S.P. and tincture mercresin. "Scott's solution was the least effective antiseptic tried."

As for soap and water alone, cultures showed from sixty-seven to one hundred percent bacterial contamination. A curious fact was elicited as to seasonal variations. In winter and spring, the percentage of positive cultures is about the same, 7.3 and 7.2 respectively, but in summer, this figure jumps to 20.1 percent,—about treble! It would seem that the skin, therefore, cannot be as well prepared in hot weather as in cooler seasons!

Gershenfeld and Patterson of the Philadelphia College of Pharmacy carried on similar studies (*Am. Jour. Pharm.* 117:1., pp. 5-11 Jan. 1945). The germs against which they tested iodine and the mercurials were E. typhosa, and Staph. aureus. "The iodine solutions in the same period . . . for comparison the weakest of them (two percent aquaous) were effective within five minutes against the typhosa in 1:300 dilution, and against aureus in 1:150 concentration."

The mercurials in the light of these studies seem not to have as good a standing as skin antiseptics as the reliable extract of wellknown seaweed.

Vichy and Madame Sevigne

Vichy, on account of the remedial properties of its waters in certain diseases and disorders, was well known and employed for the regaining of health to the Romans. Wherever the almost ubiquitous Romans in the Old World were they were very watchful of their health and used every means

known in their time to conserve their bodily powers at the highest pitch. Most of the socalled healing springs and waters in any land in which they were, received their close attention and were maintained it seems to us in a remarkably able manner. It should be borne in mind too, that some of the countries conquered by them were used as colonies. Britain was colonized far into Scotland where many of them lived with their families during the greater part of their lives. The Romans controlled Britain for hundreds of years and in whatever region they happened to be, they sometimes discovered and always developed healing springs and waters. Bath waters in Somersetshire were developed magnificently by the Romans and the buildings erected by them stand for the most part today as solid as when they were put up, as an enduring monument to their building skill. Vichy in France was another practical proof of their belief that bathing in water gave them elements or ingredients calculated to fight successfully against some disorders. How they knew so much it is difficult to say, as the Romans were notoriously indifferent doctors as well as indifferent to doctors. In fact, they left the treatment of disease of any kind to the Greeks, and it is not very likely that Greek physicians, or many of them at any rate, went to Britain or France at that time. The Romans somewhat despised medical practitioners as an inferior class. On the other hand they appeared to have an inherent belief or instinct as to the good effects of bathing, especially since at Bath and Vichy evidence had already been given of the efficacy of the waters for relieving some disorders, perhaps skin affections in particular.

With this digression from the subject of the Marquise de Sevigne, who died about two hundred and fifty years ago and was an ornament of the Court of Louis XIV of France *le grand monarque* mainly on account of her intellect and sparkling wit, her Vichy experiences will be sketched. Madame de Sevigne was among the most brilliant women of all time and a shining light in her own time. She was among the greatest letter writers who ever lived, an art which has been killed in this mechanical age. Recently an Englishman, Arthur Stanley, has written and published a *Life of Madame de Sevigne.* Although she was imbued with many of the superstitions of the age like those of her class, and among other extraordinary ideas had faith in viper meat to "temper, purify and refresh the blood", while she called Sir Kendin Digby's sympathetic powder "a perfectly divine remedy"; she was in advance of most of her contemporaries, in mental powers of women certainly. When middle-aged she was attacked by what seemed to be an arthritic, combined with muscular, form of rheumatism, swelling of the hands and limbs and comparative uselessness of her hands. In any event she betook herself to Vichy. As a matter of fact she went two or three times and appears to have derived benefit from the waters and treatment. She lived to the age of seventy. As well as being one of the great letter writers of the world, she was an exceedingly apt conversationalist at a time perhaps, when good conversation was not a woman's forte. In short, Madame de Sevigne was among the outstanding personalities of her day and her name will live. As for Vichy during the war it was in the public eye for political reasons. Its history, however, from the time of the Romans has been that of one of the leading health giving springs and waters of the world. It may be linked with Bath as being renowned for these properties in the Old World, that is before America was discovered or rediscovered and has been resorted to by persons in ill health not only as a restorative center, but again like Bath as placed in a country of natural beauty where amusements of many kinds are to be found.

Famine and Malnutrition in Europe, and in the Near and Far East

The scarcity of food looms menacingly over Europe and Asia and there is fear of an almost world wide famine and consequently malnutrition, the precursors usually of deadly epidemics. Sir Jack Drummond, D.S.C., F.R.S., scientist to the British Food ministry, spoke on the subject at a meeting of the Royal Society of Arts on March 27th. According to an editorial in the *Lancet,* April 6th, "the partial eclipse of our earth by famine seems no longer in doubt. At least one quarter of the human race must lie in the path of its shadow". This alarming prediction appears prevalent everywhere among those who really know the situation. Therefore, an authoritative analysis and discussion of it by Sir Jack Drummond is timely. He began his review by emphasizing the dominant position of cereals. Bread, is the main source of energy when supplies are restricted, and potatoes come next. The proportion of total calories provided normally by bread, cereals and potatoes varies from about thirty-four percent in countries with a high standard, as Britain, to sixty to seventy percent in peasant communities, as in South Eastern Europe where such a diet can with reservations be quite nutritious. Bread in order to be up to the mark should be made with long extraction flour of high vitamin and mineral

content and the diet should contain vegetables, especially greenstuffs, to supply vitamins other than those of the B group in the bread and the C group in potatoes.

However, when all has been said on the subject which is known accurately and which if not thus known is intelligently surmised, it may be asserted that the food necessary to maintain a human being in fairly good health depends on various circumstances, namely, the work he is doing and the conditions in which the work is being done, on the individual worker's physical and mental powers and his state of health. It stands to reason that a healthy person working in the fresh air can eat, digest and assimilate much more food than one working in a factory, perhaps not too well ventilated and in other ways not quite up to high standards. This is a point that will not be elaborated. But it may be urged that no hard and fast rule can be laid down and practised.

The important question now, with famine perhaps in sight, is to suggest the best and most practical means of feeding those who do not get enough nutritious food and in some countries are in a state of semi-starvation. It is obvious that a person must eat to live, and if the most suitable food cannot be had, he must eat what can be obtained and it is the part of wisdom to eat that advised by experienced authorities. In a general way it may be said that life can be maintained on an intake of 1,500 calories but the food ingested should be as nutritious as can be obtained. There is sufficient evidence to assume that the proteins contained in whole wheat bread and potatoes make an excellent meal, at any rate, as far as quality is concerned varied or complemented with some greenstuff. There is no better food for infants, young children and the aged and for some rather feeble or not vigorous adults than good cow's milk or goat's milk. Below one thousand calories per pound of food, life cannot be maintained for long. Soya bean is perhaps the most valuable vegetable grown as to its food value, but in Britain it seems that it cannot be grown.

The crisis must be met and faced with resolution and it should be impressed on the population of all countries, not excepting Britain or even the United States, that the advice on food given by authorities should be taken and acted upon. They know theoretically and have learned by experiments and by some experience what foods should be eaten under all conditions, and in all climates, that is, in a general way.

News Items

New York State Medical Society.—The reference committee of the N.Y. State Medical Society recently announced that it had studied the report of the finance committee in the matter of the establishment of a memorial fund for the advanced education of the children of the past members of this society who have died in the service of the armed forces of our country during World War II. The committee defined advanced education as meaning a four year college education in an approved college and an additional four years of medical education in an approved medical school within the United States, in cases where such children desire to take up the practice of the profession of medicine.

The committee recommended that a fund to cover these expenses be raised by voluntary contributions. However, in view of the fact that a state of war still exists, the committee recommended that the finance committee continue to study this problem for another year and to report their findings to the House of Delegates at its annual session in 1947 for final action.

Congress of Anesthetists.—The opening session of the twenty-first annual meeting of the Congress of Anesthetists was held in the Hotel McAlpin on September 9th. Dr. John H. Evans, president of the International Anesthesia Research Society, described the use of intravenous anesthesia, introduced by Lunday in 1934 with the use of sodium pentothal, as "the outstanding advance" in this field in the last century. Dr. Robert A. Hingson, director of postgraduate instruction in anesthesiology at the University of Tennessee, declared that continuous caudal analgesia has curbed pain in childbirth and resulted in fewer deaths among infants. He said a survey of two hundred fifty thousand cases had revealed that this method had resulted in twenty-five more live babies in one thousand births.

Meeting with the Congress of Anesthetists were the International Anesthesia Research Society and the International College of Anesthetists.

Collection Center for Microbic Types.—A new collection center for microbic types at the School of Medicine, Lausanne, Switzerland, has recently been established, according to Paul Hauduroy, professor of hygiene and bacteriology, at the school. This center was not established for the purpose of maintaining the various cultures, rather it is to serve as a clearing house for the other centers. Under the auspices of the Swiss Academy of Medical Science the center will compile a catalogue containing a precise description of microbic stocks which will be distributed to research workers around the world. When a worker requires a certain organism, references to the catalogue will indicate where it can be obtained. He can then order it directly from that collection or through the center in Switzerland.

Lectures for Practicing Physicians.—A series of lectures and demonstrations on the diagnosis, treatment and management of venereal diseases started September 21st at the New York Department of Health, the Bureau of Social Hygiene has announced. There will be thirteen weekly lectures, through December 21st, by experts in the various special fields of venereal disease. The seminar is primarily for practicing physicians. No registration or fee is required. All sessions start at 10.30 a. m., and the meetings will be held in room 330 of the health department building, 125 Worth Street, New York. The meetings are informal and free discussion from the floor will be encouraged.

A New Drug.—Discovery of a new drug, called dihydrostreptomycin, a new active derivitive of streptomycin, which acts against a half a dozen types of infections, was reported to the American Chemical Society's Medicinal Division, by research workers of Parke, Davis & Company. The new compound has been examined in the test tube and has been found to be as active as streptomycin, it was pointed out by the manufacturers. In addition, the new drug is said to be much more stable than streptomycin and does not lose its test tube effectiveness in the presence of a number of agents which destroy the activity of streptomycin. Work is said to be under way to determine whether the favorable properties of the new drug stand up as well in the body as in the preliminary flask tests.

Training in Neuropsychiatry.—It is the intention of the Surgeon General to establish specialty training in neuropsychiatry at general hospitals designated as neuropsychiatric centers. Every facility will be exploited by Walter Reed, Letterman, Brooke and Fitzsimmons General Hospitals to establish the full three years of required formal training necessary for board certification in psychiatry, and one, two or even three years as may be possible at Oliver General, Madigan and Beaumont General Hospitals. In addition, Walter Reed General Hospital will provide specialty training leading to board certification in neurology.

Therapeutic Services of the Veterans Administration.—Dr. Constantine Psaki, chief of the medical rehabilitation division, announced that practitioners of physical medicine and qualified teaching personnel are needed urgently for the Veterans Administration's medical rehabilitation program. Physical medicine physicians will be in charge of physical and occupational therapy and corrective physical exercises and their work in therapy will be coordinated with educational retraining and other forms of rehabilitation, Dr. Psaki said. Appointees to position of doctor of physical medicine must be licensed practitioners with a degree of Doctor of Medicine from a Veterans Administration approved college or university. Applications should be submitted to Branch Office No. 3, at 128 North Broad Street, Philadelphia 2, or to the Veterans Administration regional office or hospital where appointment is desired.

Motion Picture X Rays.—At the meeting of the American Congress of Physical Medicine, Dr. Russell J. Reynolds, British medical authority, stated that motion picture x rays have been developed which enable doctors to study on the screen the movements of the heart and contractions of the gallbladder.

New Monograph on Vitamin C Therapy.—A thirty-two page monograph, entitled "The Advancing Front of Vitamin C Therapy" has recently been published by the Van Patten Pharmaceutical Company, Chicago. It is a supplementary compilation of the latest scientific reports between the years 1944-1946. The significance and merit of sodascorbate (tablets of sodium ascorbate) in pregnancy and lactation, geriatrics, renal involvement and endocrine disorders, etc., are expounded.

This pamphlet is available on request to the Van Patten Pharmaceutical Company, 54 West Illinois Street, Chicago, Ill.

Chest X Rays for State Employees.—Detailed arrangements were worked out jointly by the New York State Department of Health and the State Personnel Council for the mass x raying of state employees, which started in September, a move that will serve to inaugurate New York's program to blot out tuberculosis by 1965.

In order to avoid any possible delay in starting this program, because of the uncertainty of deliveries of x ray equipment, negotiations have been completed to have a commercial x raying service company do the actual work, using its own equipment and supplies. This company will furnish to the Health Department finished films of the employees x rayed, ready for interpretation. The interpretation of the films will be made by the staff of the tuberculosis division of the Health Department.

Hospital Survey and Construction Act.—Formation of a division of hospital facilities to assist Surgeon General Thomas Parran in carrying out the provisions of the Hospital Survey and Construction Act was announced today by the United States Public Health Service.

This division will absorb the functions of the hospital facilities section of the states relations division, Bureau of State Services, which was abolished simultaneously with the creation of the division of hospital facilities.

Headed by Medical Director Van M. Hoge, the newly formed division of the Bureau of State Services will be responsible for carrying out the functions which the U. S. Public Health Service is authorized to perform in accordance with the provisions of the act. This will include assistance to the states, their political subdivisions, the nonprofit organizations in matters relating to the study and construction and operation of hospitals. The division will also assist the surgeon general in preparing regulations, determining allotments and grants and considering applications, plans and projects.

Personal.—Hyman I. Goldstein, Camden, N.J., read a paper on "Coronary artery disease and angina pectoris" before a meeting of the Second Inter-American and International Congress of Cardiology in Mexico City on October 6-12th. His discussion was accompanied by lantern slides.

Dr. Fred D'Amour, professor of zoology, University of Denver, Denver, Colo., has been appointed director of the university's newly established bureau of physical and biological research and chairman of the department of zoology. Dr. D'Amour, who recently completed research on the high altitude physiology of the rat, will be in charge of all research in the physical and biological sciences at the University of Denver.

Dr. Arthur Mullin Wright, George David Stewart, professor of surgery and chairman of the department at New York University College of Medicine, retired August 31 after thirty-nine years of teaching.

Dr. James A. Brussel, assistant director of Willard State Hospital, Willard, N.Y., has been awarded first prize by the American Physicians' Literary Guild for his novel *Buried by Beans.* The award is the first to be made by the guild, which was formed at the San Francisco convention of the American Medical Association in July of this year.

Donald G. Marquis was elected president of the American Psychological Association for 1947, according to an announcement made to the membership during the annual meeting at Philadelphia on September 6th.

Dr. John H. Mulholland has been named George David Stewart professor of surgery and chairman of the department at New York University College of Medicine to succeed Dr. Arthur M. Wright, who retired August 31.

Brigadier General James Stevens Simmons, chief, preventive medicine service, the Surgeon General's Office, retired on July 1, 1946 after thirty years of active service in the Army Medical Corps, to become dean and professor of public health of the Harvard University School of Public Health, Boston.

Dr. Roland A. Bosee, now on terminal leave from the United States Navy, has returned to Endo Products, Inc., Richmond Hill, N. Y. Dr. Bosee will be plant superintendent and direct his efforts toward coordinating the work of all Endo technical departments.

Dr. George B. Wallace, professor and chairman of the department of pharmacology, retired on August 31 after forty-four years on the medical faculty of New York University. Since 1928 he has also been professor of pharmacology at New York University College of Dentistry.

The appointment of Dr. William Taylor Lineberry, Captain, USN (retired), as chief of the general surgery section, Veterans Administration's Branch Office Three, has been announced by Dr. Henry R. Carstens, director of Branch Three medical service. Dr. Lineberry reported for duty at the Branch Office in Philadelphia on September 3rd.

Mlle. Le Docteur Geneviève Genty, librarian of the Académie de Médicine, is one of four librarians sent to this country by the French Government to make a survey of American medical institutions, according to Army Medical Library News. She recently spent two weeks in Washington observing processes and methods at the Army Medical Library. Mlle. Genty received her M.D. degree at the Académie de Médicine in 1943. Formerly with the Swiss Red Cross, she went to Germany with UNRRA in February, 1946, to aid displaced peoples. While there, she visited and treated many refugees in concentration camps.

Letter From Britain

(From Our Own Correspondent)

Sir Almroth Wright, a few weeks ago, celebrated his eighty-fifth birthday. He has gained international fame. He graduated in medicine at Dublin University Medical School and has been a member of the staff of St. Mary's Hospital, London during fifty years or thereabouts. He first made his name in medical history by perfecting the system of inoculation against typhoid fever, a discovery which saved the lives of many thousands in the first world war. As a teacher he has been very effective and successful. Many well-known medical men have passed through his hands. Among these was Sir Alexander Fleming, the discoverer of penicillin. A tribute to his place in the history of the medical scientists of this era are the somewhat unkindly things that Bernard Shaw has said about him, or rather put into his mouth in the character of Sir Colenso Ridgeon in *The Doctor's Dilemma.* Of late years Sir Almroth Wright has been studying the blood and somewhat concentrating on vaccines. He is in good health physically and mentally.

Red Cross International Conference

The first international conference of the League of Red Cross since the ending of the war was held at Oxford, England from July 8-20th, and was attended by representatives of sixty nations or so, including well known members of the medical profession from the United States, British Dominions, South African republics and various European countries. To deal with all the subjects discussed would be impossible here. A matter of great interest was the possibility of utilizing the services of the Red Cross members in the rehabilitation of the disabled and the after care of the tuberculous; provision of blood for transfusion services and the establishment of centers, for treatment under supervision, of the rheumatic disorders. Rheumatism in Britain is the outstanding industrial disease and is the cause of more disablement among workers than any disease, and from the economic standpoint the loss is tremendous. At the conference, reference was made repeatedly of the need for better interchange of information on subjects such as prevention and treatment of infectious disorders, the treatment of serious accidents and the combating of shock.

Book Reviews

Evolution of Medicine

The Romance of Medicine. The Story of the Evolution of Medicine from Occult Practices and Primitive Times. By BENJAMIN LEE GORDON, M.D. Illustrated with 240 pictures. Philadelphia: F. A. Davis Company, 1944. Pp. 624. Price $5.00.

The author gives us a fascinating account of a mixture of folklore, customs, manners, traditions and historical facts in the field of medicine. He presents a comprehensive description of the ideas and conceptions of our savages, semicivilized and civilized ancestors concerning the state of health and disease and also concerning the forces governing the human mental and physical activities, their thoughts of the engima of birth and death and the destiny after death.

Dr. Gordon is the first to describe these mysterious topics in a scientific-popular way. He shows that medicine had its birth with the first man when he recognized the blessings of health and life and endeavored to preserve them. The author succeeds in tracing various medical and allied facts, customs and folklore to ancient concepts. His scholarly explanations throw new light upon the discussed topics, presenting a new approach to the subject. He discusses early ideas of fecundation, gestation, disease, demonology, the evil eye, astrology, saints and spiritual healers, magic and mystic symbols. An irresistibly interesting account of the evolution of medicine!

The book is a learned work on the history of medicine excellently illustrated and arranged according to a special plan and for the subject it discusses it is a most valuable addition to works on the history of medicine containing twenty-six chapters, two hundred forty illustrations, notes and an index. It is well written and presents pleasant reading as well as a stimulating effect in causing further research in this field.

Questions and Answers

Medical Licensure Examinations. Topical summaries, Questions, and Answers. By HAROLD RYPINS, M.D. Fifth enlarged edition, completely revised under the editorial direction of WALTER L. BIERRING, M.D., F.A.C.P., with the collaboration of a review panel. Philadelphia, London, and Montreal: J. B. Lippincott Co., 1945. Pp. 546. Price $6.00.

A wise man once said: "Examinations are formidable, even to the best prepared, for the greatest fool can ask more questions than the wisest man can answer." "Standing for examinations" as the English say, is indeed a formidable test for most of us; for few are quite sure, even after four years of intense undergraduate medical study, whether we have not slipped up somewhere and have left holes in our knowledge which it is the examiner's job to probe.

Time was when "quiz trots" of this kind were in disfavor; for it was felt that a student might be lucky enough to hit just the questions that were asked and so get by with a minimum of actual medical knowledge. That is no longer true. In the very first edition, Dr. Rypins who had screened thousands of medical applicants for licensure before his death, stated that "the average medical graduate is well prepared and that it is needless for him to dread the ordeal of the licensing examination." Maybe so, but he still dreads it, human nature being what it is. Sometimes his knowledge is not well systematized and he fails because he did not connect facts which belong together. Here, in this book, knowledge is organized and so systematized that it affords a comprehensive review of the entire field of medicine. Moreover, examiners are often more interested in the method of orderly procedure in an examination paper than they are in the exactness of the answers, within normal limits of reason and memory. They know that an orderly, investigative, searching mind will acquire the necessary facts from any clinical problem case which comes to it, and will work out the details into a comprehensive fabric which will lead to correct diagnosis. Minds which cannot do this do not belong in medicine and their possessors are sure to fail.

The collaborators in this new quiz book are all men of experience both in the theory and practice of medicine. Therefore, they know what to ask and what they have a right to expect from a candidate. Here in a little more than five hundred pages is set down not only the essence of theoretical medical practice, but much that is required for daily use. It is a helpful book even for those who will "never take another exam".

Sulphonamides

The Medical Use of Sulphonamides. By various authors. Edited by F. HAWKING and F. H. K. GREEN. Medical Research Council. War Memorandum No. 10. London: H. M. Stationery Office, 1945. Pp. 71. Price $.40.

This is marked "second edition", Medical Research Council War Memorandum No. 10. The chemistry and pharmacology of the sulfa group is rehearsed and is then brought into rapport with penicillin therapy. The toxic and other harmful effects of the sulphonamides such as anuria, drug fever (sulphathiazole) leucopenia, anemia, and hypersensitivity are set forth, and a method of regulation of dosage according to the content of the sulfa in the blood is given. "Very few patients require sulphonamide treatment for more than 7 to 10 days, if it is carried out rigorously in the beginning. All resistant cases should be treated with penicillin if available." This is quoted from the paragraph dealing with otitis media and mastoiditis.

As for giving the sulfas to wounded men, the prophylactic course is "not without risk." Wound treatment, if severe, calls for systemic and local use of the sulfas, but "in most such cases, penicilllin . . . should be given as well." As valuable as the sulfa drugs have been in saving life, the danger of permanent injury to the body (kidneys, blood-vascular system) is very real. They are likely, therefore to be supplanted or, at least, supplemented by penicillin which, in many cases, secures brilliant results without any danger to health or life.

Surgery

Preoperative and Postoperative Treatment. Edited by Lt. Colonel Robert L. Mason, M.C., A.U.S., Cushing General Hospital, Framingham, Mass., and Harold A. Zintel, M.D., Harrison Department of Surgical Research, University of Pennsylvania School of Medicine; assistant surgeon, Hospital of the University of Pennsylvania. Second edition. Illustrated. Philadelphia and London: W. B. Saunders Co., 1946. Pp. 584. Price $7.00.

Twenty collaborators have combined their experience to revise this book, the first edition of which was published in 1937. Many advances and some changes have taken place in the decade, especially in what the author calls "the philosophy of surgical treatment". This is the common sense of surgery at its best. There has been increased turning back to physiology, biochemistry, bacteriology and pharmacology in the management of all surgical conditions. This applies especially to shock, which is now quite well understood, thanks to the work of Crile and his school. Shock due to head injuries is of especial importance since these are becoming quite common from automobile accidents, accidents during games (football) etc. An unfailing rule is, never give morphine in these cases because it depresses the medullary center of respiration and may cause a fatality.

The chapter on "Acidosis and Alkalosis" while rather technical should be read because of its importance before and after operations. A balance must be maintained between the two to insure good healing and prompt recovery.

Blood transfusions, either of plasma or whole blood has become of first importance in many surgical crises. The late war emphasized the very great value of this life-saving procedure. There are contraindications, for example, myocardial degeneration, advanced nephritis and in the terminal stage of cancer and tuberculosis. Pulmonary edema may result, with prompt exitus.

Many chapters have been entirely rewritten for this edition. Among them physical medicine in surgical practice, thrombophlebitis, and emergency care of cranial injuries. Again and again this book stresses the importance of a "complete physical" in all preoperative conditions save in vital emergencies. Coincident items, often surgical, are disclosed which may entirely change the original plan of management.

Thoroughness is the keynote to this excellent contribution to present day surgery.

Orthopedics

The Management of Fractures, Dislocations, and Sprains. By John Albert Key, M.D., clinical professor of orthopedic surgery, Washington University School of Medicine; and H. Earle Conwell, M.D.; chairman of the committee on fractures and traumatic surgery of the American Academy of Orthopedic Surgeons. Fourth edition. Illustrated. St. Louis, Mo.: The C. V. Mosby Co., 1946. Pp. 1322. Price $12.50.

It is a compliment to any medical text to have been republished four times in twelve years. This means that revisions have taken place on an average of every three years, and therefore, a tribute is paid to the purpose of publishers and authors to keep the book up to date in every respect.

The preface states that the need for a new edition is not based entirely on the changes in surgical thought and practice due to World War II as is so often stated in present-day revised editions, but it is a result of the natural progress of medicine. Many new methods of treating injuries of the bones and joints are coming out of hospital and private practice, as well as those which were necessitated by the exigencies of the war. Strange to say, nothing seems fixed. The methods of yesterday which were considered ample and even revolutionary, soon become obsolete, and new procedures take their place. One should consider carefully, however, whether this "desire for something new" which the Apostle Paul ascribed to the Athenians is always something desirable. In the welter of the vast amount of surgical material, some old and useful methods of management may have been forgotten, or are likely to be. Getting the patient well as safely, speedily and satisfactorily as possible has always been the *desideratum verum,* and it shall always be.

In this instance "the principal changes have been made in the sections on the spine, the hip and on compound fractures . . . Many of the less valuable illustrations have been omitted, and about two hundred new ones have been added".

The invention of new apparatus, particularly fracture beds which can be adjusted to the particular fracture under treatment is one of the advances. There are many others . . . This is literally a massive volume,—it weighs seven pounds. The necessity is probably based upon paper shortage and other disadvantages arising from the late unpleasantness. One may hope for a two-volume edition later on in the interest of the reader.

Radiology

Roentgen Diagnosis of Diseases of the Gastrointestinal Tract. By John T. Farrell, Jr., M.D., clinical professor of radiology, Graduate School of Medicine, University of Pennsylvania. Illustrated. Springfield, Ill.: Charles C. Thomas, 1946. Pp. 271. Price $5.50.

This is a very practical book apparently written for beginners both in study and practice of radiology and based upon a series of notes prepared for class room work. The subject matter is prepared in somewhat outline form, and a similar pattern is followed in each subject or part of the alimentary canal based upon the topographical and etiological classification outlined by the American Medical Association in Jordan's book. The text emphasizes contour, motility and position of the given part; and then there are appended important observations designed to help the worker until sufficient personal experience has been accumulated by detailing the normal as well as the abnormal and by directions as to how and what to look for when making the roentgenological examinations. For convenience full advantage is taken of the tabular form in which the text is arranged.

The book should be used as a practical guide in roentgenological practice.

MEDICAL RECORD

A National Review of Medicine and Surgery, Established 1843.

FORMERLY KNOWN AS THE MEDICAL JOURNAL AND RECORD

PUBLISHED MONTHLY BY

THE MEDICAL JOURNAL AND RECORD PUB. CO., INC.

Office of Publication: 307 Main Street, Kutztown, Pennsylvania. Editorial and Executive Offices: 215 Fourth Avenue, New York 3, N. Y.

GREGORY STRAGNELL, M.D. .....*Editor*
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Subscription Price: Under Domestic Postage, $4 Yearly; Under Foreign Postage, $4.75 Yearly; Single Copies, 40 cents.

Remittance should be made by New York Exchange, post office, or express money order, payable to The Medical Journal and Record Publishing Company, Inc., or by registered mail, as the publishers are not responsible for money sent by unregistered mail. Remittances from Foreign Countries should be made with International Money Orders.

MANUSCRIPTS

All material for publication should be sent to THE EDITOR of the MEDICAL RECORD, 215 Fourth Avenue, New York 3, N. Y.

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OCTOBER 1946

Medicolegal Notes

Additional Compensation Claim

Where there was direct evidence by medical witnesses that after September 7, 1941, the claimant was disabled by an injury sustained on May 24, 1941, and underwent numerous treatments for that injury, it was held that a causal connection had been established by a preponderance of the evidence between the May 24, 1941 injury, and the disability subsequent to September 7, 1941. On the former date she was cut on her left instep by broken glass. Fox vs. Industrial Commission, Ohio Court of Appeals, 64 N.E. 2d 423.

Compensable "Injury" Defined

"Injury" as used in the Ohio Workmen's Compensation Act "comprehends a physical or traumatic damage or harm, accidental in its character in the sense of being the result of a sudden mishap occurring by chance, unexpectedly and not in the usual course of events, at a particular time and place."

Evidence that a claimant on the state insurance fund was required, in his work, for over a period of three months to use a heavy pneumatic air hammer in a cramped position, that something "took hold of him" which he thought was rheumatism, and testimony of a doctor showed some arthritis in the hip joint and some calcification further down did not show an accidental injury aggravating or accelerating a preexisting disease which would entitle him to benefits under the Act. Nothing occurred to the workman previous to the quoted statement which would constitute an accidental injury.

The Ohio Industrial Commission disallowed the claim. This was reversed by the Court of Common Pleas, whose judgment was affirmed by the Court of Appeals. The judgment of the latter court was reversed, for the reasons given above, by the Ohio Supreme Court, and final judgment rendered for the Industrial Commission. Reynolds vs. Industrial Commission, 61 N.E. 2d 784.

Liability for Employees Giving Blood Transfusion to Wrong Person

The New York Appellate Division, Necolayff vs. Genesee Hospital, 61 N.Y.S. 2d 832, affirmed judgment for $6,500 damages against a charitable hospital for personal injuries sustained by a paying patient because of alleged negligence in the operation of the hospital. The question involved in the case was whether or not the defendant, as a charitable hospital, was liable to a paying patient for her loss due to the mistake of an interne attached to the hospital.

Through some mistake (the record of the evidence did not show what mistake or whose mistake) an interne entered the plaintiff's room at the hospital, where she was under the charge of her own doctor after an operation for the removal of a kidney, and gave her a blood transfusion intended for another patient. The result of this operation was a severe illness, the plaintiff being at or approaching her menopause. Neither the interne nor the nurse who aided him in giving the transfusion were produced as witnesses because they were in the armed services.

The court could not find in the textbooks and reported cases, a case similar to this in its facts. As employees of the hospital, the interne and nurse who administered the transfusion to the wrong person, "had, among other employees, placed upon them the duty of protecting patients. Their entrance into the wrong room caused the professional nature of their errand to cease. After notice was given to them by Mrs. Necolayff that she was not the person for whom the transfusion was intended, they, as servants of the hospital, should have ceased in their effort to give the transfusion and should have protected her from the 'tort' inflicted on her. In their failure to perform this duty, they did not act as professional persons, and there is no reason why their failure should not cast liability on the hospital."

Taylor, P.J. dissented on the ground that the defendant being a charitable institution, was entitled to the benefit of the rule laid down in Schloendorff vs. Society of New York Hospital, 211 N.Y. 125, and other cases.

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Time for Compensation Claim

Under the Kansas statute the time within which an employee must make and serve a claim for compensation in order to maintain compensation proceedings, now one hundred twenty days, is not affected or interrupted by the injured employee, procurement of medical treatment on his own account after the refusal or neglect of the employer to furnish medical attention. In this respect such procurement differs from the furnishing of medical aid by the employer. The latter is "payment of compensation", the former is not. Solorio vs. Wilson and Co., Kansas Supreme Court, 169 P. 2d 822.

Causal Connection Between Fall of Light Reflector and Claimant's Injuries

The Ninth Circuit Court of Appeals, Contractors vs. Marshall, 151 F. 2d 1007, held that, in a Longshoremen's and Harbor Workers' Act Case, there was evidence from which it could be inferred that a procurement agent employed by contractors for naval construction received a blow from the fall of an electric light shade reflector, weighing between three and four pounds which fell about six feet from the ceiling, resulting in continuing symptoms of brain disturbance, until his partial paralysis from cerebral thrombosis following hospitalization for nearly a month as against medical opinions that the symptoms of brain injury between the time the lamp fell on the claimant's head and his paralysis were such as not to warrant such inferences.

Unlawful Prescribing of Habit Forming Drugs Not a Felony

Under New York Public Health Law, Sec. 422, relating to violations of the statute with respect to habit forming drugs, the unlawful prescribing of habit forming drugs is a misdemeanor and not a felony. Tonis vs. Board of Regents, 295 N.Y. 286, 67 N.E. 2d 245, reversing 270 App. Div. 50, 58 N.Y.S. 2d 766. The word "prescribe" in the statute making it unlawful to prescribe narcotic drugs means the unlawful issuance of a prescription by a physician. It does not mean to sell a narcotic drug. It was therefore held that the issuance by a physician of a prescription for morphine sulphate, not in the regular course of his practice but to a drug addict for a prohibited use, was not a "sale", and consequently was only a misdemeanor and not a felony under New York law. It followed, therefore, that the physician's license could not be automatically revoked without a hearing before the Medical Grievance Committee. It was held immaterial that a sale was made (innocently by a druggist) because of the prescription, or that the physician pleaded guilty to an indictment in a Federal court charging him with the sale of morphine sulphate in violation of the Internal Revenue Code. In that statute no differentiation is made between "sell" and "prescribe". The determination of the Board of Regents revoking the physician's license was accordingly annulled and the matter remitted to the board for further proceedings not inconsistent with the opinion of the Court of Appeals.

"Visible Wound or Contusion" Proviso

In an action on the double indemnity provision of a life policy, where the insured had died of sunstroke, the only question was whether the action which caused death was within the coverage of the policy. This was a diversity of citizenship case, arising in Oklahoma, and tried in the Oklahoma Federal District Court, where there was a judgment for the plaintiff. Reversing this judgment, with directions to enter judgment for the defendant, the Tenth Circuit Court of Appeals, Paul Revere Life Ins. Co. vs. Stanfield, 151 F. 2d 776, held that under the settled law of Oklahoma sunstroke is an accident effected solely through external, violent and accidental means, and under the Supreme Court's decision in Erie Railroad Co. vs. Tompkins, that determination by the Oklahoma Supreme Court was binding on the Federal Court.

But whether the accident which caused insured's death, was within the coverage of the policy was to be determined from a rider attached to the policy which limited the coverage to death resulting from such accidents as are evidenced by a visible wound or contusion on the exterior of the body. This question, on the agreed upon facts, came to be: Did any of the following symptoms constitute a visible wound or contusion? "The deceased became pale and remarked that he felt a 'hot spell or something' coming over him; he immediately went to bed; his clothes were wet with perspiration; he complained of smothering to death and of pains in his arms; his face was a pale yellow color and his lips were blue and swollen; the pupils of his eyes were dilated, and his eyes were glassy; he vomited blood practically the entire time, and hot fluid flowed from his nose; and just before death occurred his 'skin had turned blue practically all over his body' ". The Circuit Court of Appeals was of the opinion that none of these symptoms constituted such a visible wound or contusion.

Had the proviso been differently worded, and required a visible mark or evidence of injury, or language meaning substantially that, the court said it would have had no difficulty in holding the accident covered by the policy, as other decisions have done, but here the proviso required a wound or contusion on the exterior of the body. Even in the latter case, however, the court cited cases where the provisos and the facts were substantially the same, and the courts reached different conclusions, and other cases which held similar facts insufficient to meet the requirements in similar provisos. The court found it difficult to think of pallor, perspiration, dilated pupils or a bluish tint to the skin immediately preceding death as either wounds or contusions, within the commonly understood and accepted meanings of these words. And in the absence of any guidance from the Oklahoma Supreme Court decisions, the court chose to follow those decisions which hold manifestations such as quoted above insufficient to constitute a wound or contusion upon the exterior of the body.

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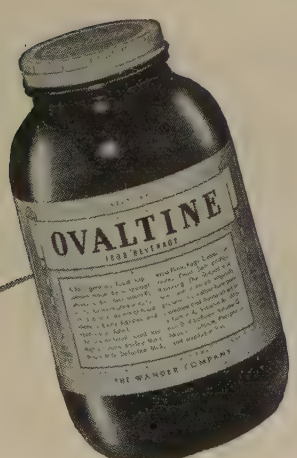

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Dr. G. B. Granger, said in the August issue of *Medical Times,* that Cesarean births are not so dangerous to the mother as is commonly thought. Of 6215 deliveries in a four year period, 3.25 percent or 202 were Cesarean births with no maternal deaths in the latter group. Dr. Granger gives the morbidity figures for various conditions requiring Cesarean section as well as those indications making this type of delivery necessary or optimal.

Heart Education Program

The Metropolitan Life Insurance Company has issued a report on recent studies in mortality from heart disease. The company states that during the past third of a century, the improvement in mortality from heart disease was most pronounced in the younger age groups and decreased progressively with advance in age. The death rate from diseases of the heart and arteries, corrected for the ageing of the population, dropped virtually 30 percent between 1911-15 and 1940-44, according to experience among the industrial policyholders. This reduction in mortality from the principal cardiovascular-renal diseases has been particularly marked among white females—37 percent in the above-mentioned period. Among the males, the decrease in mortality, while not as marked as among the females, was 25 percent, still quite a substantial reduction.

The company states that concentration of effort must now be placed on teaching the public what is known about prevention, early rec-

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ognition and care of cardiac lesions.

In order to assist in the attainment of this goal, the company is conducting a special campaign on heart disease during the fall and winter months. At that time field representatives, in cooperation with official and voluntary agencies, will reach homes with a recently published pamphlet, *Your Heart*, developed in cooperation with the American Heart Association. A lay educational film on heart disease is also being prepared. Distribution will be made to physicians of a packet in which will be included material of special interest to doctors. A scientific exhibit on heart disease, first shown at the American Medical Association meeting in San Francisco, is available for state and local professional meetings.

Synthetic Amino Acids

The Winthrop Chemical Co., Inc., Rensselaer, N. Y., has announced that increased production of synthetic amino acids was made possible by new methods of preparation developed in their laboratories. This company has pioneered in the use of the readily prepared ethyl acetamidocyanoacetate for the synthesis of a wide variety of amino acids, and only two steps are required in production when this intermediate is reacted with an alkyl halide and the resulting product hydrolyzed. The new method is useful for the preparation not only of such naturally occurring amino acids as alanine and leucine, but also of many amino acids not known to occur in nature, the producers state.

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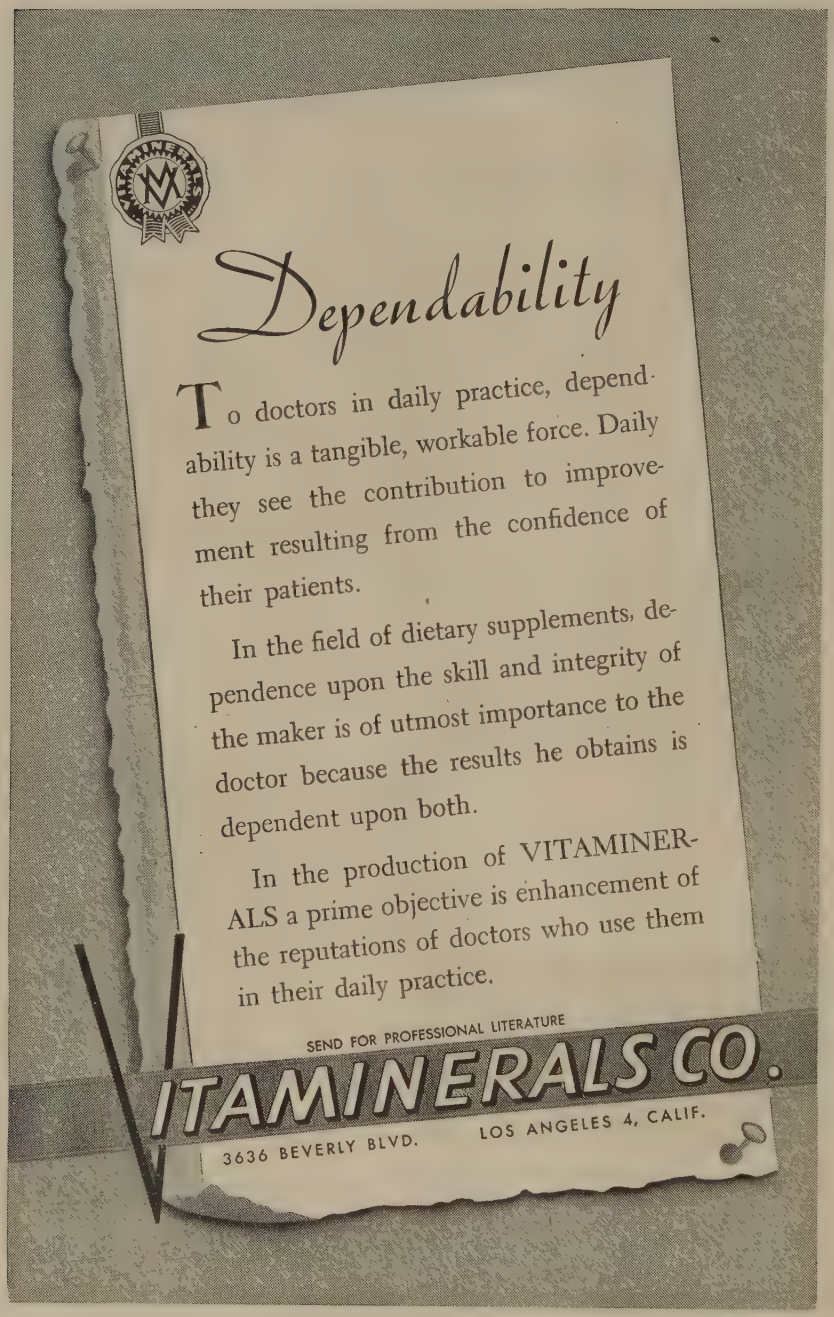
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Trends in Heart Disease

According to the *Statistical Bulletin,* August 1946, heart disease measured in terms of sheer numbers of persons affected, is our most important medical and public health problem. There are today about four million people in the United States who have some form of heart disease, and the number of cases is steadily increasing. Heart disease ranks first in the list of causes of death. It is not surprising, therefore, that there is a widespread impression that the situation with regard to the disease is critical, that the outlook for the patient with heart disease is poor and that the conditions of modern life are largely to blame. Actually, the situation is much better than appears on the surface, and gloomy beliefs are not warranted by the facts.

It is true that the crude death rate from heart disease has shown a steady increase over the years. The major part of this increase, however, simply reflects the rapidly increasing proportion of older persons in our population.

Aside from the ageing of the population, there are other factors of importance that have brought about an increase in the recorded death rate from heart disease. Increasingly many deaths formerly reported as from nephritis or from cerebral hemorrhage, have been more recently ascribed to heart disease because of the changing medical concept regarding the relationship of high blood pressure to these conditions. The present concept is that the heart in most such cases is the organ primarily affected by increased blood pressure. Also, as a

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result of the more accurate determination of the cause of edema, a frequent late complication in both heart and kidney diseases, many cases with dropsy are now recognized as due to heart failure which formerly would have been ascribed to renal disease.

When all of these influences are taken into account, it is doubtful whether there has been any real increase whatever in heart disease, beyond what is expected from the increase in the number of older persons in our population. Indeed, it is likely that there has been an actual decrease in the mortality from heart disease at every age, roughly parallel to the decline in the death rate, for the aggregate of the cardiovascular-renal diseases, states the *Bulletin*. Altogether then, there is little cause for alarm over the situation in heart disease today.

Further improvement is possible in the reduction of the ravages of heart disease among younger persons. A major task is the attack on the preventable causes of heart disease, particularly of rheumatic fever in children and of syphilis in young adults. Much can be accomplished also by the early detection of heart disease and the prompt institution of a suitable regimen of medical and nursing supervision. Such steps are necessary not only for heart disease of infectious origin, but for the socalled degenerative types due chiefly to high blood pressure or arteriosclerosis. It is, of course, impossible to prevent these varieties of heart disease entirely, but much can be done in the way of postponing their onset and in slowing down their progress.

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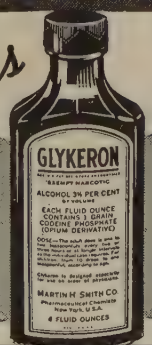

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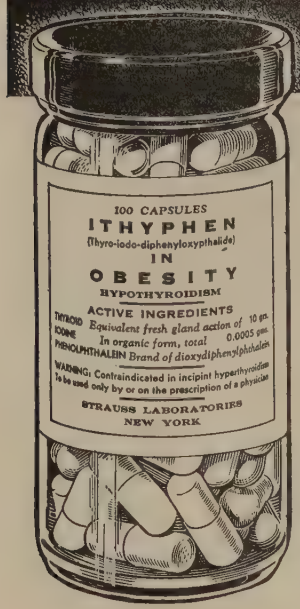

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National Cancer Foundation

Dr. George T. Pack, chairman of the medical and scientific advisory council of the recently organized National Cancer Foundation, pointed out that one of the most urgent public health problems of the day is the need of hospital facilities for the treatments and terminal care of the innumerable patients in the United States who have incurable cancer.

This committee will work with Julius Jay Perlmutter, president of The National Cancer Foundation, under the direction of Dr. Pack. The foundation recently announced its plans for raising of funds to provide these facilities, as well as to continue to press vigorously with its affiliated organizations, Sponsors of Government Action Against Cancer and The National Foundation for the Care of Advanced Cancer Patients.

Stressing the inadequacy of the few institutions in the country to provide care of this nature, Dr. Pack stated that the average home is not prepared to accommodate itself to months of invalidism involved when a member of a family is stricken with cancer, beyond hope of control.

Revealing that many more people die of cancer than tuberculosis, he said that the healing and cure of tuberculous patients can be accomplished with greater certainty by confinement in special sanatoria and that these advantages have been accepted by the people and the governments of municipalities and states. The professional care of the patient with cancer is infinitely more difficult, it was learned. He also urged that the citizens of the United States take action to stimulate by local, state and federal means, hospital provisions for the deserving cancer patient, "because almost every home in the country has been afflicted with this disease." A similarity to the problem was drawn in the case of patients with mental diseases, usually cared for in special hospitals for the insane, sometimes for indefinite periods. This is solved and accepted by most families and the state through taxation.

He added further that the purpose of voluntary hospitalization of the advanced cancer patient is not solely to relieve any home or family of a difficult social and financial burden, but more important still, to do something for the unfortunate patient. Special hospitals for this purpose, such as the contemplated Hope Institute in New York, and eventually a series of them through the United States, as planned by The National Cancer Foundation, will be so equipped with x rays and radium laboratories, operating rooms, neurological facilities for the relief of pain, expert and constant nursing and professional care that many of these patients will be salvaged and all of them will be helped. Dr. Pack said, "It is the physician's responsibility and desire to do everything possible for the cancer patient, but he should be provided with the hospitals and equipment to make this possible. It is cruel to deny expert treatment and care to any individual who has a hopeless disease. It is not in keeping with the American tradition to tolerate this negligence. It is time for an educational crusade to enroll the support of every citizen."

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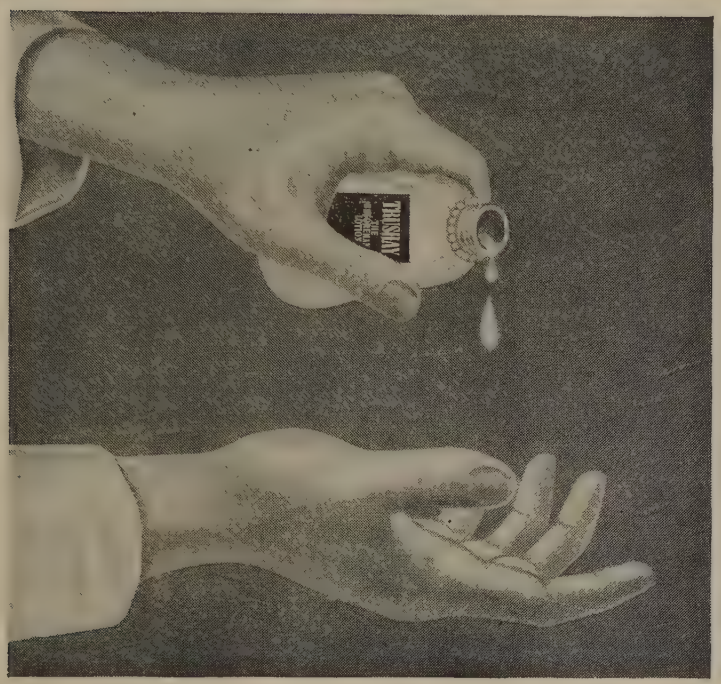

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New Hospital Sites

President Truman last week approved acquisition of land for five new Veterans Administration hospitals, transfer of two surplus military hospitals to Veterans Administration for temporary use, and major changes in the Veterans Administration hospital construction programs in Oklahoma and Missouri. The new sites are at Toledo, Ohio, Madison, Wis., New Orleans, La., Dallas, Tex., and Klamath Falls, Ore.

The Toledo property will be the site of a one thousand-bed neuropsychiatric hospital. The Madison property will contain a five hundred-bed tuberculosis hospital; the New Orleans property will be the site of a five hundred-bed general medical and surgical hospital; the Dallas property will also be the site of a five hundred-bed general medical and surgical hospital and the Klamath Falls property will contain a two hundred-bed general medical and surgical hospital.

The military hospitals transferred to Veterans Administration for temporary use are at San Patricio, Puerto Rico, and Baer Field near Fort Wayne, Ind. The U.S. Naval Hospital at San Patricio will be used as a temporary two hundred-bed general medical and surgical hospital, pending development of a permanent hospital program in Puerto Rico. The Army hospital at Baer Field will house two hundred and fifty general medical and surgical cases, pending construction of a permanent two hundred-bed general medical and surgical hospital in Fort Wayne.

Major changes in the Veterans Administration hospital construction program in Oklahoma include: 1. Transfer to Veterans Administration of the naval hospital buildings at Norman, Okla. for temporary use as a seven hundred and fifty-bed neuropsychiatric hospital; 2. Construction at the Norman site of a permanent seven hundred and fifty-bed neuropsychiatric hospital for treatment of chronic cases; 3. Construction of a one thousand-bed general medical and surgical hospital at Oklahoma City, Okla., with about two hundred and fifty of the beds to be set aside for treatment of acute neuropsychiatric cases. This project is subject to a future appropriation.

Major changes in the Veterans Administration hospital construction program in Missouri are: 1. Construction in St. Louis of a new one thousand-bed general medical and surgical hospital and cancellation of plans for a five hundred-bed neuropsychiatric hospital. The site for the one thousand-bed hospital has not been selected yet. 2. Conversion of the present hospital at Jefferson Barracks, Mo., to a hospital for chronic neuropsychiatric cases, and increasing the capacity of the hospital to one thousand ninety-seven beds by building a five hundred-bed addition; 3. Cancellation of plans for a one thousand bed neuropsychiatric hospital for chronic cases, previously scheduled for an unselected site in Southern Missouri. A restudy of future Veterans Administration bed requirements resulted in the change of plans.

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Use of Vitamin to Ease Pain and Speed Childbirth

Professor Rafael Shub, Leningrad, Russia, has reported the successful use of vitamin B_1 in "painless childbirth, according to the *N. Y. Times,* August 29th, in a book issued by the Central Institute of Obstetrics and Gynecology. According to the *Moscow News,* clinical tests at the institute in which vitamin B_1 was used provided forty percent "altogether painless" births out of one thousand, while in 51.2 percent of the remainder protracted alleviation of pain was obtained. The effect of the drug lasted for a short while in 3.2 percent of the cases, while in 5.6 percent of cases the injection produced no effect whatever.

Dr. Shub's thesis, as explained by the newspaper, is that during birth a woman's organism requires large quantities of vitamin B_1 because of the contraction of the muscles and the excitement of the nervous system. During childbirth women's bodies secrete only minute quantities of the vitamin even though it may have been introduced in large quantities.

Dr. Shub first used the vitamin in treating gynecological ailments. During the war he was called to attend a difficult birth. The mother was in extreme agony. Dr. Shub gave her an injection of vitamin B_1 with results that surpassed his expectations. Within ten minutes the pain subsided and in a few hours, much sooner than the doctors had anticipated, the mother gave birth to a healthy normal child. The subsequent examination did not reveal any harmful effects from the vitamin injection.

This first case was followed by regular clinical tests at the Central Institute, where a careful record of the efficacy of the new method was kept with the aid of special apparatus designed by S. Yagunov, the institute's director.

According to Dr. Shub, the vitamin retards muscular fatigue and provides an energy reserve, which is highly important during childbirth when the body expends a tremendous amount of energy. It is this latter quality that explains why the vitamin accelerates delivery, Dr. Shub believes.

Experimentation is continuing to determine the mechanism of the action of the vitamin on the organism and to determine proper dosage. Vitamin B_1 is now used in district maternity homes in the Leningrad region under the supervision of the institute.

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Hospital Survey and Construction Act

With the signing by the President of the Hospital Survey and Construction Act, an appropriation of three hundred and seventy-five million dollars is authorized during the next five years for the construction of hospitals and health centers. Three million dollars is also authorized for state conducted surveys of need. These must be made preliminary to the granting of federal funds for construction.

The act provides latitude for each state to develop its own program of hospital and health center construction, to be administered by state authorities under standards specified by the United States Public Health Service. The surgeon general will be assisted in establishing standards by a newly created Federal Hospital Council consisting of eight members to be appointed by the Federal Security Administrator.

Any state may initiate action by submitting a request to the surgeon general for funds to carry out an inventory of existing hospitals, and to prepare a plan for the construction necessary to provide adequate care for all the people. In making the request, the states must designate a single state agency to carry out the survey and planning and must appoint a properly qualified advisory council to consult with the state agency. The proportionate share for each state of the total federal appropriation for survey and planning will be determined by the populations of the several states. However, federal funds must be matched by two to one in defraying the survey expenses.

"This act sets for the first time a national policy which makes it clear that hospitals in the future must be planned, located and operated in relation to the overall health needs of the people," Thomas Parran, Surgeon General, U. S. Public Health Service said. "This policy, as evolved through the leadership of hospital authorities of the country, is recognition of the integrated rôle that hospitals and health centers must play in the future. Adequate hospitals, health centers and related physical facilities are the essential workshops, without which it is not possible to provide even a minimum of modern health and medical services."

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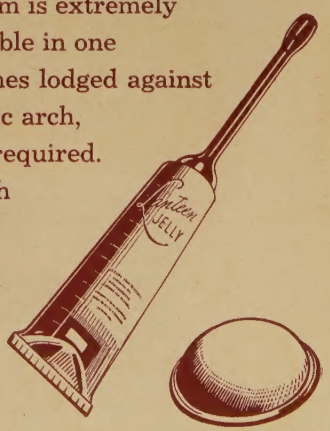

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[1]*The Journal of Laboratory and Clinical Medicine, 31:3, 313-316, March 1946.*

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